

Operating Instructions **agria**

Translation of the original operating instructions

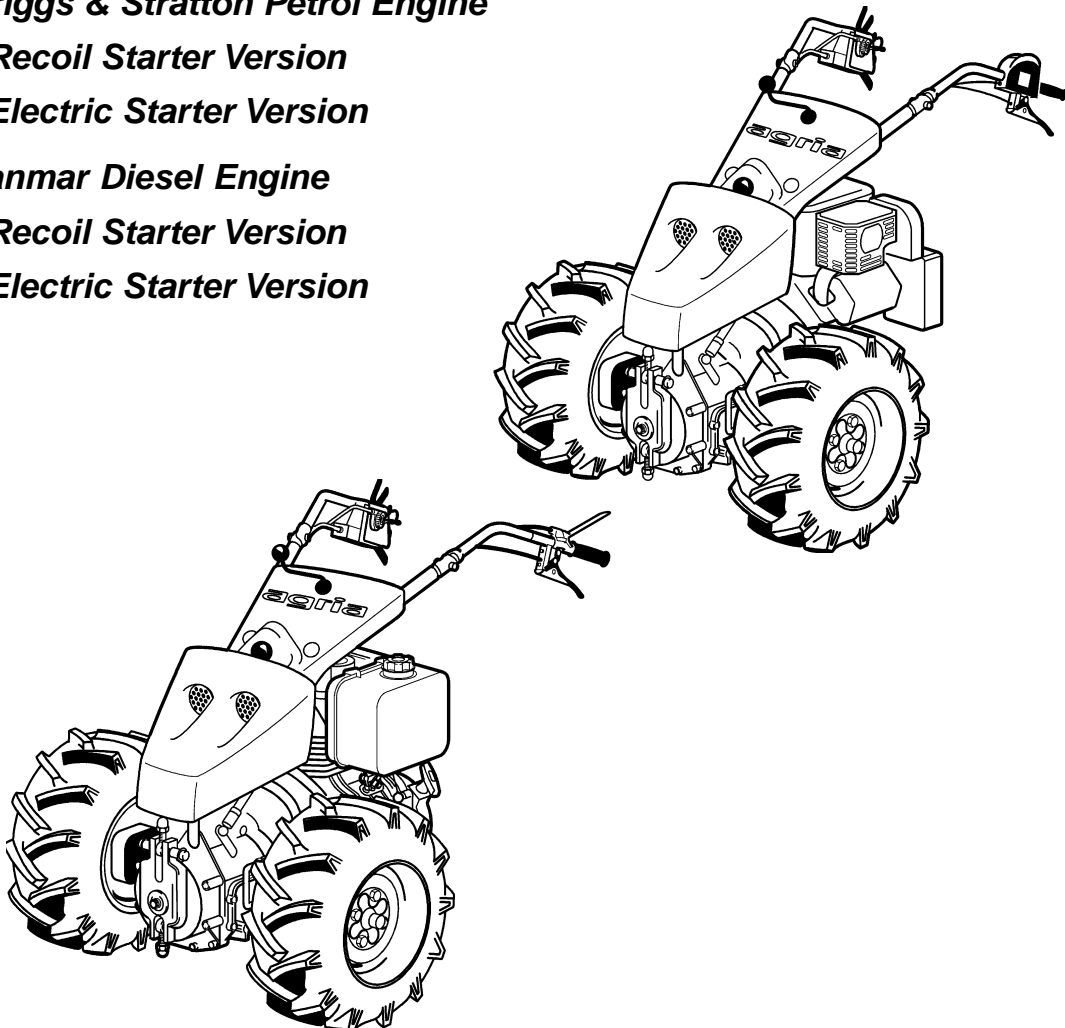
Hydrostatic Tool Carrier 5900 Bison

Briggs & Stratton Petrol Engine

- Recoil Starter Version
- Electric Starter Version

Yanmar Diesel Engine

- Recoil Starter Version
- Electric Starter Version



5846, 5155B



Before commissioning the machine, read operating instructions and observe warnings and safety instructions.



Please complete:

Machine Type No.:
Identification No.:
Engine Type:
Engine No.:
Date of Purchase:

For name plate, refer to page 3/Fig. A/4.

For engine type and number, refer to page 72/Fig. C/4 petrol engine to page 68/Fig. D/17 diesel engine

Please state these data when ordering spare parts to avoid wrong deliveries.


Only use original agria spare parts!

Specifications, figures and dimensions stated in these instructions are not binding. No claims can be derived from them. We reserve the right for improvements without changing these instructions.

This delivery comprises:

- Operating instructions
- Tool carrier
- Tool kit

→ **agria - Service** ←
= contact your agria-workshop

➔  see separate engine operating instructions!

Symbols



Warning – danger



Important information



Fuel



Choke



Battery charge indicator



Clutch



Forward



Reverse



Fast



Slow



Hydraulic system



PTO



Brake



Parking brake



Closed (locked)



Open (unlocked)



Clockwise

Fig. A

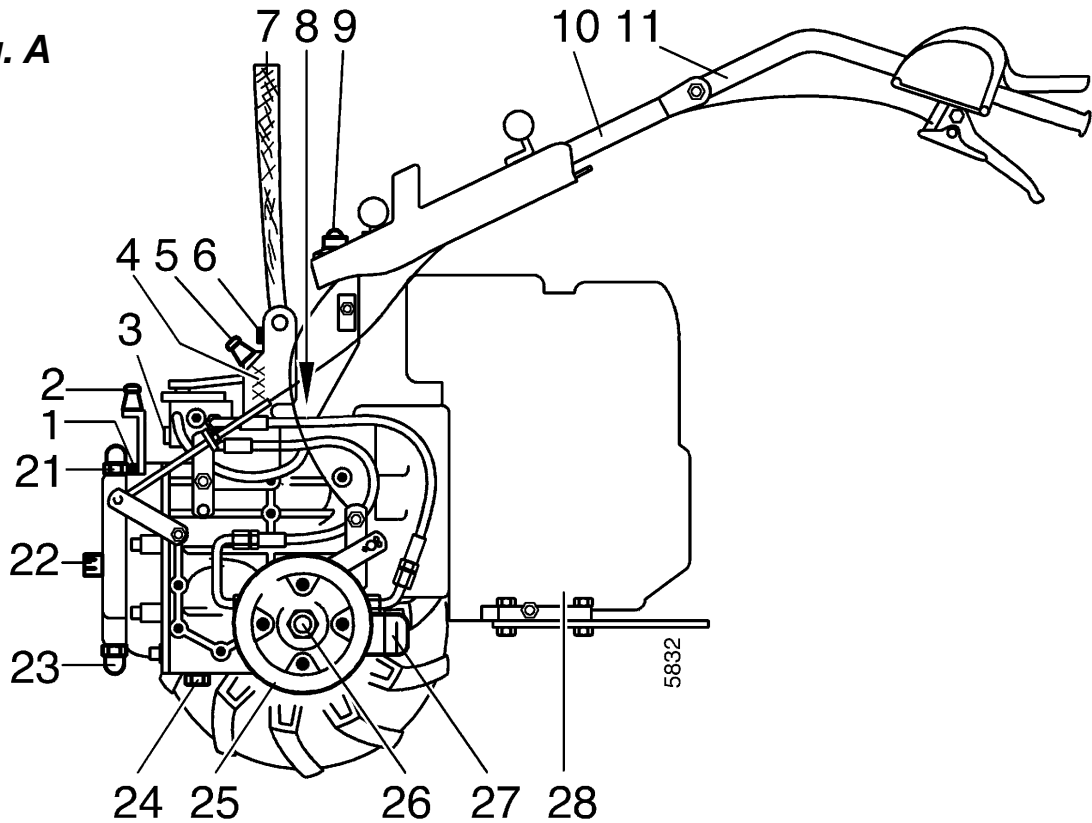
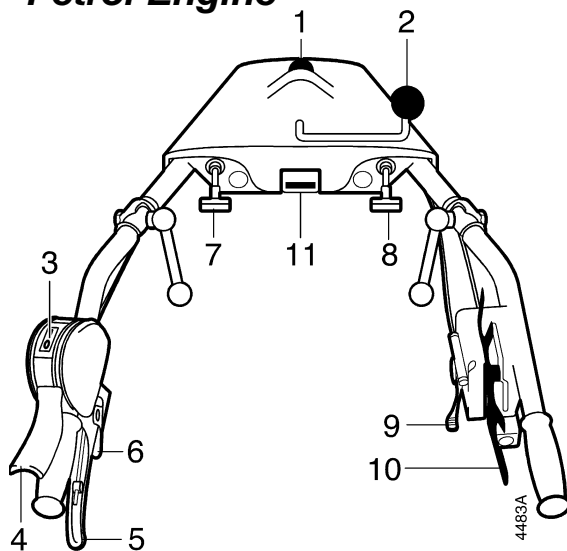


Fig. B

Petrol Engine



Diesel Engine

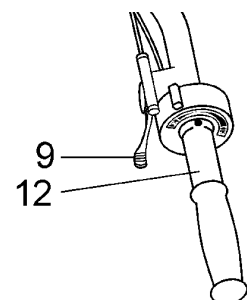
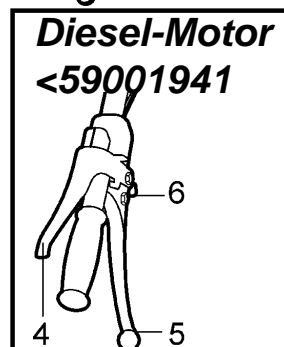
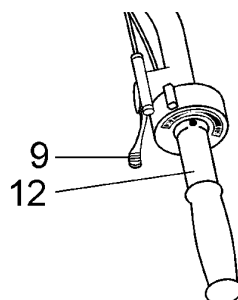
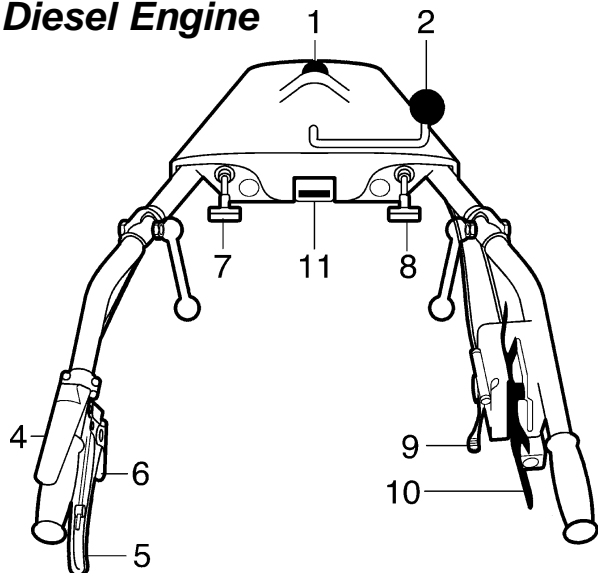


Fig. A:

- 1 *Transmission / hydraulic oil dipstick and filling opening*
- 2 *Ball head for hood carrier front*
- 3 *Idle speed shifting mechanism (bypass)*
- 4 *Nameplate (machine identification no.)*
- 5 *Ball head for hood carrier rear*
- 6 *Transmission venting plug*
- 7 *Loading belt*
- 8 *Steering handle locking bolt rollers*
- 9 *Steering handle, central screw*
- 10 *Lower steering handle*
- 11 *Steering bar*
- 21 *Eye bolt with cap nut, top*
- 22 *PTO-shaft*
- 23 *Eye bolt with cap nut, bottom*
- 24 *Transmission oil drain screw*
- 25 *Brake drum*
- 26 *Wheel hub*
- 27 *Oil filter cartridge*
- 28 *Engine*

Fig. B:

- 1 *Ball handle for lateral steering bar adjustment*
- 2 *Eccentric lever for central brake*
- 3 *Engine-off switch (Version petrol engine)*
- 4 *Safety circuit lever*
- 5 *Engine clutch engagement lever*
- 6 *Pawl for engine clutch lever*
Pawl for engine clutch lever (Version diesel engine <59001941)
- 7 *Connection mechanism for PTO-shaft*
- 8 *Operating mechanism for steering handle lock*
- 9 *Speed adjusting lever*
- 10 *Lever for stepless adjustment of driving speed and forward-reverse driving*
- 11 *Operating hour counter/speed counter (optional)*
- 12 *Twist grip for stepless adjustment of driving speed and forward-reverse driving*

Amount of Delivery 2

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Lubricants and Anti-Corrosive Agents

Use the specified lubricants for engine and transmission (see “Specifications”).

*We recommend using **bio-lubricating oil** or **bio-lubricating grease** for “open” lubricating points or nipples (as specified in the operating instructions).*

We recommend using bio anti-corrosive oil for preservation of machines and implements (do not apply on painted external covers). Oil can be brushed or sprayed on.

Anti-corrosive agents are kind to the environment and degrade fast.

Using ecologically safe bio-lubricants and bio-anti-corrosives, you contribute to environmental protection and to the wellbeing of humans, animals and plants.

Maintenance and Repair

The trained mechanics of your agria workshop carry out expert maintenance and repair.

you should only carry out major maintenance work and repairs on your own, if you have the proper tools and knowledge of machines and internal combustion engines.

Do not hammer against the flywheel with a hard object or metal tools as it might crack and shatter in operation causing injuries and damage. Only use suitable tools for pulling the flywheel.

Petrol Engine

*This engine runs perfectly using commercially available **lead-free Normal and Super petrol (also E10) as well as Super plus.***

Do not add oil to petrol.

If, for environmental reasons, you use unleaded petrol, make sure the fuel is drained completely when shutting down the engine for more than 30 days. This is to prevent resin residues from depositing in the carburetor, fuel filter, and tank. Or add a fuel stabilizer.

For further instructions refer to "Engine Preservation".

Diesel Engine

This Diesel engine runs on conventional Diesel fuel of a min. cetane rating of 45.

Do not use Diesel fuel oil substitutes, they may be harmful to the fuel system. Fuel should be free of water or dust.

Winter operation:

To ensure reliable winter operation use "winter diesel fuel", to be purchased at filling stations.

At outside temperatures of below -15°C, take the following additional precautions:

add commercial flow conditioners

or

add paraffine oil to depress diesel pour-point:

Paraffine oil:	winter diesel fuel	summer diesel fuel
	<i>pour-point</i>	
50%	app. -31°C	app. -25°C
30%	app. -26°C	app. -15°C
10%	app. -20°C	app. -9°C

As a last resort, you can add up to 30% of regular petrol to avoid paraffine deposits. However, this has negative effects on consumption rate and performance.

Before starting the engine, read the operating instructions and note:

1

Warning



This symbol marks all paragraphs in these operating instructions which affect your safety. Pass all safety instructions to other users and operators.

Due Use

The tool carrier Bison is a hand-controlled automatic single-axle machine which can power and/or pull various implements approved by the manufacturer. Areas of application are for such as turning over the ground, mowing grass and meadowland, snow clearance and sweeping (due use).

Any other type of operation is considered undue. The manufacturer is not liable for any damage resulting from undue use, for which the risk lies with the user alone.

When the single-axle tractor/the tool carrier/the multi-purpose machine is used on public roads, the local national road traffic rules must be observed, e.g. reflectors, lights.

The single-axle tractor/the tool carrier/The multi-purpose machine is not intended for use with a trailer on public roads or as a tractor unit without implements.

Any other type of operation is considered undue. The manufacturer is not liable for any damage resulting from undue use, for which the risk lies with the user alone.

Due use includes compliance with

manufacturer's instructions on operation, maintenance and repair.

Any unauthorized changes to the tool carrier render manufacturer liability null and void.

General Instructions on Safety and Accident Prevention

Basic Rule:

The standard accident prevention regulations must be adhered to, as well as all other generally accepted rules governing operational safety, occupational health and road traffic regulations.

For drives on public roads, the latest traffic code applies.

Accordingly, check the tool carrier for road and operational safety each time you take up operation.

Only persons familiar with the tool carrier and instructed on the hazards of operation are allowed to use, maintain and repair the tool carrier.

young persons of 16 years or younger may not operate the tool carrier!

Only work in good light and visibility.

Operator's clothes should fit tightly. Avoid wearing loosely fitting clothes. Wear solid shoes.

Note the warning and instruction signs on the tool carrier for safe operation. Compliance is for your own safety.

When transporting the tool carrier on vehicles or trailers outside the area to be cultivated, ensure that the engine is shut off.

Careful with rotating tools – keep at a safe distance!

Beware of coasting tools. Before you start any maintenance or repair on them, wait until tools have come to a complete stop.

Foreign powered parts shear and crush!

Riding on the attachment during operation is not permitted.

Implements and weights affect the driving, steering, braking, and tip-over characteristics of the tool carrier. Therefore, ensure steering and braking functions are sufficient. Match operating speed to conditions.

Do not change settings of governor. High engine speed increases risk of accidents.

Working Area and Danger Zone

The user is liable to third parties working within the tool carrier's working range.

Staying in the danger zone is not permitted.

Check the immediate surroundings of the tool carrier before you start it. Watch out for children and animals.

Before you start work, clear the area from any foreign object. During operation, always watch out for further objects and remove them in time.

For operation in enclosed areas, ensure that a safety distance is kept to enclosures to prevent damage to tools.

Operation and Safety Devices

Before you start the engine

Become familiar with the devices and operating elements and their functions. Above all, learn how to turn the engine off quickly and safely in an emergency situation.

Ensure that all protective devices are mounted and positioned to provide protection.

With no implement mounted, make sure PTO-shaft is covered with the protective cap.

Starting the engine

Do not start engine in closed rooms. The carbon monoxide contained in the exhaust fume is extremely toxic when inhaled.

Before you start the engine set all operating elements to neutral or idling position.

For starting the engine, do not step in front of the tool carrier and the implement.

Do not use assist-starting liquids when using electrical assist-starting devices (jumper cable). Danger of explosion.

Operation

Never leave the operator's position at the steering handle while tool carrier is at work.

Never adjust the operating handles during work – danger!

1

For all works with the tool carrier, in particular for turning, the machine operator must keep the distance to the machine given by the steering handles.

Riding on the implement during operation or in transport is not permitted.

If clogging occurs in the implement, shut off the engine and clean the implement with an appropriate tool.

In case of damage to the tool carrier or to the implement, immediately shut off the engine and have it repaired.

If steering causes problems, immediately bring the tool carrier to a halt and turn it off. Have the malfunction removed without delay.

To prevent the tool carrier from sliding on slopes make sure it is secured by another person using a bar or a rope. This person must stay at a higher position than the vehicle and at a safe distance from the attachment at work.

If possible, always work across the slope.

End of Operation

Never leave the tool carrier unattended with the engine running.

Before you leave the tool carrier, shut off the engine. Then close fuel taps.

Secure tool carrier against unauthorized use. If tool carrier is equipped with ignition key, remove the key. For all other versions, remove spark plug connector.

Implements

Only mount implements with the engine and PTO shut off.

Always use appropriate tools and wear gloves when changing implements and parts thereof.

For mounting and dismounting implements bring stand into proper position and ensure stability.

Secure tool carrier and implements against rolling off (parking brake, wheel chocks).

Beware of injuries while coupling implements. Work with particular care.

Hitch implements as specified and only couple at specified points.

Secure tool carrier and implement against unauthorized use and rolling off when you leave the machine. If necessary, install transport or security devices and secure.

Mowing Implement

Handle with care! Sharp blades of the cutter bar may cause injuries! Remove knife guards only for mowing and refit immediately after work has finished.

For transport and storage always mount the knife guards. Secure finger bars additionally with tension springs.

Do not transport the dismounted cutter bar without knife guards.

When mounting and dismounting the cutter bar, make sure all blades are protected by the knife guards.

To exchange the knife and to mount/dismount the knife driver, make sure that you turn screws away from cutting blades.

For grinding the mowing knives, always wear safety goggles and gloves.

Weights

Fit weights properly and at specified points.

Maintenance

Never carry out any maintenance or cleaning with the engine running.

Before you work on the engine, always remove spark plug connector.

Check regularly and, if necessary, replace all protecting devices and tools subject to wear and tear.

Replace damaged cutting tools.

Always wear safety gloves and use proper tools when exchanging cutting tools.

Do not carry out repairs like welding, grinding, drilling, etc. on structural and safety-relevant parts (e.g. steering handle, hitch)!

Keep tool carrier and implement clean to avoid risk of fire.

Check nuts and bolts regularly for tight fit and re-tighten, if necessary.

Ensure that you re-install all safety and protective devices and adjust them properly after maintenance and cleaning.

Only use original agria spare parts. All other commercial spare parts must correspond to quality and technical requirements specified by agria.

Storage

It is not allowed to store the tool carrier in rooms with open heating.

Never park the tool carrier in closed rooms with fuel left in tank. Fuel vapours are hazardous.

Engine, Fuel, and Oil

Never let the engine run in closed rooms. Extreme danger of intoxication! For the same reason, also replace damaged exhaust pipe immediately.

Be careful when handling fuel. Great danger of fire! Never refill fuel close to open fire, inflammable sparks or hot engine parts. Do not refill fuel in closed rooms. Do not smoke when refilling!

Refill only with the engine shut off and cooled down.

1

Do not spill any fuel, use a proper filling device (e.g. funnel).

In case of fuel-spillage, pull the tool carrier away from the spillage before you start the engine.

Make sure fuel is of specified quality.

Store fuel in approved cans only.

Liquids leaking under high pressure, e.g. fuel, can penetrate the skin and cause severe injuries. Immediately see a doctor.

Store anti-corrosive agents and stabilizing liquids out of reach of children. If sickness and vomiting occur, see a doctor. If fuel has contacted eyes, rinse them thoroughly, avoid inhaling of vapours.

Read and observe enclosed instructions.

Before you dispose of opened and seemingly empty pressurised tins (e.g. of assist-starting liquids) make sure they are completely empty. Empty them in ventilated places safe from spark formation or flames. If necessary, dispose of tins in hazardous waste deposits.

Be careful when draining hot oil, danger of burns.

Make sure oil used is of specified quality. Storage is in approved cans only.

Dispose of oil, greases, and filters separately and properly.

Hydraulic System

The hydraulic system is subjected to high pressure.

When connecting hydraulic motors, ensure the specified connection of the hydraulic hoses.

Hydraulic oil emerging under high pressure may penetrate the skin and cause serious injuries.

In case of injuries, immediately consult a physician – risk of infections.

Prior to works on the hydraulic system, render the latter pressureless and shut down engine (specialized workshop).

When searching leakages, use suitable aids considering the risk of injuries (specialized workshop).

Regularly check hydraulic hose lines for damage and ageing and replace them, if necessary.

Only use original agria hydraulic hoses.

Tyres and Tyre Air Pressure

When working on wheels, make sure tool carrier is parked properly and secured against rolling off.

Any repairs are to be carried out by trained mechanics only and with the appropriate tools.

Regularly check tyre air pressure. Excessive pressure may cause bursts.

Use appropriate tyre air pressure for operation with implements.

Re-tighten attachment bolts of drive-wheels or check tightness when doing maintenance work.

Electrical System and Battery

When working on the electrical system, make sure the battery is disconnected (negative pole) (for tool carriers equipped with battery).

Make sure to connect battery properly – first connect positive pole and then negative pole. Disconnect in reverse order.

Be careful with battery gases – explosive!

Avoid spark discharge and open flames near batteries.

Remove plastic cover (if included) to recharge battery to prevent highly explosive gases from building up.

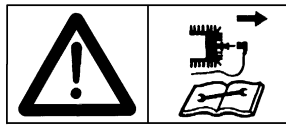
Be careful when handling battery acid!

Only use specified fuses. Stronger fuses will destroy the electrical system – danger of fire.

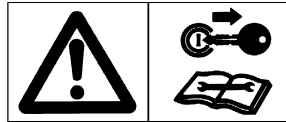
Always cover positive pole with specified cover or terminal cap.

Persons having a pacemaker may not touch live parts of the ignition system when the engine is running.

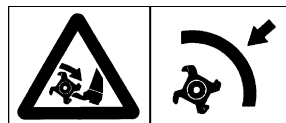
Explanation of Warning Signs



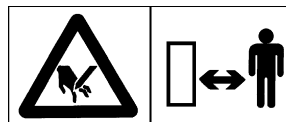
Before any cleaning, maintenance, and repair work shut off the engine and pull spark plug connector (petrol engine) resp. ignition key (diesel engine).



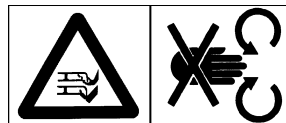
Do not work without protective covers mounted. Before starting the engine, bring covers in proper position.



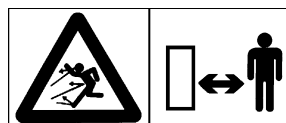
With engine running, keep at a safe distance from cutting knife.



Do not touch moving machinery parts. Wait until they have come to a complete stop.



With engine running, keep at a safe distance.



Signs



When working with the machine, wear individual protective ear plugs.

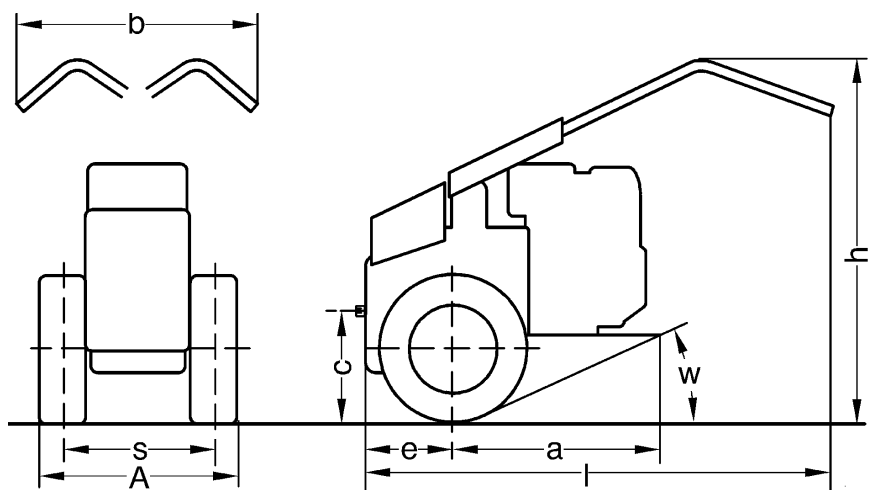


Wear protective gloves.




Wear solid shoes.

2



Dimensions: a_1 ; e_1 = axle displaced forwards

	(mm)							
	a	a_1	b	c	e	e_1	h	l
5.00-10 AS	550	663	760	270	270	167	ca. 990	1350
20x8.00-10								
21x11.00-8								
5.00-12 AS				290			ca. 1010	
23x8.5-12								
23x10.5-12								

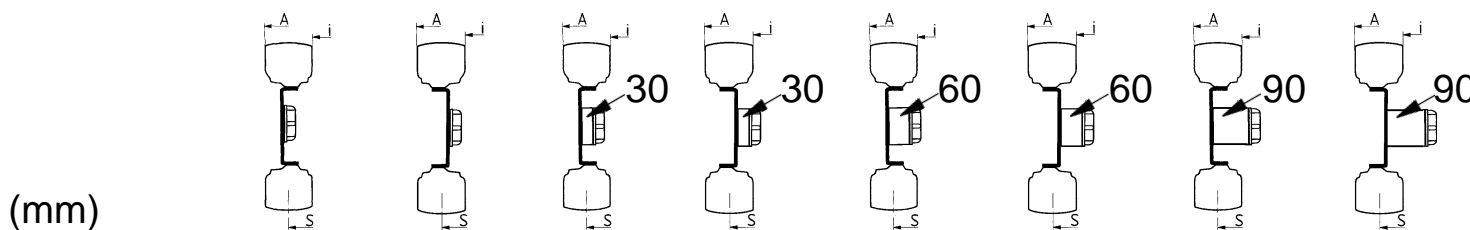
2. Specifications

Wheel combination and Track Widths

agria

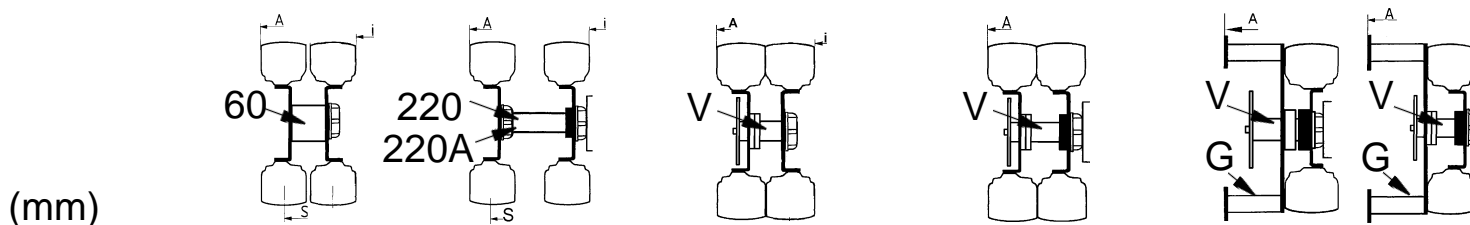
Bei Ausführung Portalachse mit Achsverstellung und bei Dieselmotor jeweils + 40 mm.

30 = Art. 2519 011
60 = Art. 2416 011
90 = Art. 5519 031
220 = Art. 5616 511
220A = Art. 5519 011
V = Art. 5916 211
G (10") = Art. 5917 011
G (12") = Art. 5917 021



(mm)

B								30			30			60			60			90			90		
		A	S	i	A	S	i	A	S	i	A	S	i	A	S	i	A	S	i				A	S	i
1	23x8.50-12 AS	830	615	400	1050	835	620	890	675	460	1110	895	680	950	735	520	1170	955	740	1010	795	580	1230	1015	800
2	23x10.50-12 AS	960	685	410	1040	765	490	1020	745	470	1100	825	550	1080	805	530	1160	885	610	1140	865	590	1220	945	670
3	5.00-12 AS	790	635	480	970	815	660	850	695	540	1030	875	720	910	755	600	1090	935	780	970	815	660	1150	995	840
4	5.00-10 AS	780	650	520	930	800	670	840	710	580	990	860	730	900	770	640	1050	920	790	960	830	700	1110	980	850
5	20x8.00-10 R	870	680	490	960	770	580	930	740	550	1020	830	640	990	800	610	1080	890	700	1050	860	670	1140	950	760
6	21x11.00-8 Terra																			1140	865	590	1210	935	660



(mm)

B		60			220 220A			V +B1	V +B2	V +B3	V *B4	V +B4	V +B1	V +B2	V +B3	V +B4	V +B5	V +G		V +G	
		A	S	i	A		i	A	A	A	A	A	A	A	A	A	A	A	"	A	"
1	23x8.50-12 AS				1500		620	1260		1140			1480		1360			1314	12	1534	12
2	23x10.50-12 AS				1490		490		1510	1270				1590	1350			1444	12	1524	12
3	5.00-12 AS				1420		660			1100					1280			1274	12	1454	12
4	5.00-10 AS	860	730	520	1280		670				1040					1190		1264	10	1414	10
5	20x8.00-10 R				1410		660					1250					1340				
6	21x11.00-8 Terra																				

2. Specifications

agria

2

Clutch: Single disc dry clutch

Transmission: Hydrostat

Driving speeds

Forward: 0–7.0 km/h

Reverse: 0–3.6 km/h

PTO: 805 rpm

gear independent

at 3600 engine rpm

direction of rotation:

clockwise, looking on PTO,

constant in forward and reverse

Steering:

Fully hydraulic steering handle

Steering handle fixable with discon-

nection of the hydraulic system for

manual steering

Steering handle: height adjustable,

side adjustable without tools

Oil for transmission and hydrostat:

optionally:

● Multi-purpose oil:

SAE 10W-40 API-SE/SF (or higher)

● Bio hydraulic oil:

Synthetic ester basis HEES

Viscosity as per ISO VG 46

Purity class min. 16/13-ISO 4406

e.g.

ARAL: Vitam EHF 46

BP: Biohyd SE 46

ESSO: HE 46

FUCHS: Plantohyd S 46

PANOLIN: HLP Synth 46

Filling volume at

First filling: abt. 7.0 l

Oil change: abt. 5.0 l

Oil filter: . Screw-type cartridge AW 14

Weights:

Empty weight: (with fuel tank filled up):

	without	with
	drive-wheels	23x8.5-12

Vanguard

Recoil starter	190.8 kg	224 kg
----------------	----------	--------

Vanguard

Electric starter	198.8 kg	239 kg
------------------	----------	--------

Yanmar

Recoil starter	200.8 kg	234 kg
----------------	----------	--------

Yanmar

Electric starter	215,8 kg	249 kg
------------------	----------	--------

Tyres: 23x8.5-12 wide track field tyre
(series equipment)

optionally:

0190 112 5.00-10 field tyre

3490 411 5.00-12 field tyre

3490 511 20x 8.00- 10 grass tyre

3490 611 21x11.00- 8 terra tyre

for this Terra-Grip design, track-width

adjusters are required:

Article 5519 031

5990 711 .. 23x10.5-12 wide track field
tyre

Tyre air pressure at:

5.00-10	1.5 bar
---------------	---------

5.00-12	1.5 bar
---------------	---------

21x11.00- 8	0.8 bar
-------------------	---------

20x8.00- 10	0.8 bar
-------------------	---------

23x8.5-12	1.3 bar
-----------------	---------

23x10.5-12	1.3 bar
------------------	---------

5917 011 traction cage wheels 10"

..... for 5.00-10 AS

5917 021 traction cage wheels 12"

... for 5.00-12; 23x8.5-12; 23x10.5-12)

Drive-wheel attachment

and application see page 26 - 27

2. Specifications

Petrol Engine

agria

Petrol Engine

Manufacturer: Briggs & Stratton
Type: Vanguard OHV 13 HP
..... 245 437-0284

Version: Fan-air-cooled
1 cylinder-4-stroke
OHV engine (petrol)

Bore: 89 mm

Stroke: 63 mm

Cubic capacity: 390 ccm

Output: 9.7 kW (13 SAE-hp)
at 3600 rpm

Max torque: 25.1 Nm at 2400 rpm

Spark plug: Bosch FR8DC
Champion RC12YC
Spark plug gap 0.6 - 0.7 mm

Ignition:

Electr. magnetic ignition, contactless
ignition point is pre-set

Radio remote screened as per
VDE 0879

Valve clearance (engine cold):

Intake 0.05 mm

Outlet 0.10 mm

Starter: Recoil or electric starter
depending on version

Generator: 12V 16A

Battery: E-starter version .. 12V 20Ah
Flat plug fuse 25A

Fuel: Commercial petrol
min. octane number 90 RON
(refer to fuel recommendations)

Fuel tank capacity: abt. 7.9 l

Fuel consumption: 312 g/kWh

Air filter: Dry filter element with
foamed preliminary filter

Carburetor: Horizontal
float carburetor

Rated speed: 3600 rpm

Top no-load speed: 3800 rpm

Idling speed: 1750 rpm

Engine oil:

Filling quantity approx. 0.96 l
Multi-grade oil

at ambient temperature -15° to +45°C:

SAE 10W-40 API-SC (or higher)

at ambient temperature -25° to +15°C:

SAE 10W-20 API-SC (or higher)

Noise level:

● In accordance with EN 12733
appendix B:

Noise level at operator's ear

- without implements .. $L_p = 89,6$ dB(A)

- Double knife drive. $L_p = 91,8$ dB(A)

- Rotary mower 80 $L_p = 89,7$ dB(A)

- Safety Mulcher 90 ... $L_p = 91,0$ dB(A)

● In accordance with 2000/14/EC, ap-
pendix III, part B, chapter 32 lawn
mower:

Acoustic power level:

- without implements . $L_w = 99,1$ dB(A)

- Double knife drive. .. $L_w = 105,4$ dB(A)

- Rotary mower 80 $L_w = 105,2$ dB(A)

- Safety Mulcher 90 . $L_w = 104,5$ dB(A)

Vibration acceleration value:

In accordance with 2002/44/EG and EN 12733
on handlebar grip with:

Rotary mower, Flail mower, Safety

Mulcher $a_{hw} < 2,5$ m/s²

Double knife drive.. $a_{hw} 5,60$ m/s²

Operability on Slopes:

Engine is suited for use on slopes (with
oil level at "max" = upper level mark)

Continuous operation

..... 45° inclination (100 %)

2

2. Specifications

Diesel Engine

agria

Diesel Engine L100

Manufacturer: Yanmar

Type:

Electric starter version L100AE-DEI

Recoil starter version L100AE-DI

Version: Fan-air-cooled
1-cylinder-4-stroke diesel engine

Bore: 86 mm

Stroke: 70 mm

Cubic capacity: 406 ccm

Output: 7.4 kW at 3600 rpm

Max torque: 27 Nm at 1700 rpm

Injection pressure: 200 bar

Valve lash (engine cold)

Intake: 0.15 ± 0.02 mm

Outlet: 0.15 ± 0.02 mm

Starter: Recoil or electric starter,
depending on version

Battery: 12V 20Ah

Glass fuse 15A (30 x 6.5 mm)

Fuel: conventional fuel,
Min. cetane rating: 45
(refer to fuel recommendations)

Fuel filter:

Coarse-mesh strainer in filler neck

Fine-mesh strainer in fuel tank
drain hole

Fuel tank capacity: approx. 5.5 l

Air filter: Dry filter element with
foamed preliminary filter
and cyclone pre-separator

Rated speed: 3600 rpm

Top no-load speed: 3800 rpm

Idling speed: 1700 rpm

Lubrication: Pressure lubrication
via gear pump
Full flow oil filter

Engine oil:

Filling quantity approx. 1.65 l
Multi-grade oil

at ambient temperature -15° to $+45^{\circ}\text{C}$:
SAE 10W-40 API-SC (or higher)

at ambient temperature -25° to $+15^{\circ}\text{C}$:
SAE 5W-20 API-SC (or higher)

Noise level:

● In accordance with EN 12733
appendix B:

Noise level at operator's ear

- Double knife drive. $L_p = 86,0$ dB(A)

- Flail mower $L_p = 86,3$ dB(A)

- Safety Mulcher $L_p = 87,0$ dB(A)

● In accordance with 2000/14/EC, ap-
pendix III, part B, chapter 32 lawn mower:

Acoustic power level:

- Double knife drive. $L_w = 106$ dB(A)

- Rotary mower $L_w = 106,3$ dB(A)

- Safety Mulcher $L_w = 107$ dB(A)

Vibration acceleration value:

In accordance with 2002/44/EG and EN 12733
on handlebar grip with:

- Double knife drive.. $a_{hw} 7,05$ m/s²

- Flail mower $a_{hw} 2,83$ m/s²

- Safety Mulcher $a_{hw} 3,41$ m/s²

Operability on Slopes:

Engine is suited for use on slopes
(oil level at "max" = upper mark)

Continuous operation possible
up to 20° inclination (37 %)

The tool carrier *agri*a type 5900 Bison is a base power machine and is always operated with an implement mounted. Therefore, the machine is suited for applications in farming and forestry, as well as for winter service.

Available implements:

- Front implements for
 - mowing
 - sweeping
 - snow clearing and tilling
 - gravel and salt spreading

For a choice of further attachments refer to our price-list.

Engine

- The **four-stroke petrol engine** runs on commercial petrol (refer to fuel recommendations page 7).

Ignition System

The engine is equipped with a contactless ignition system. We recommend to have necessary check-ups done by an expert only.

- The **four-stroke diesel engine** runs on commercial diesel fuel (refer to fuel recommendations p7). See to using proper fuel in winter.

During the first 20 operating hours (break-in period) do not use engine to maximum power.

Even after break-in period never use engine at higher speed than necessary for the work in hand.

ⓘ High engine speed is harmful to any engine and considerably affects its durability. This applies especially for no load operation. Any overspeed (have the engine roar) can result in immediate damage.

Cooling System

The cooling system is fan-cooled. Therefore keep screen at recoil starter and cooling fins of cylinder clean and free from sucked-in plant trash.

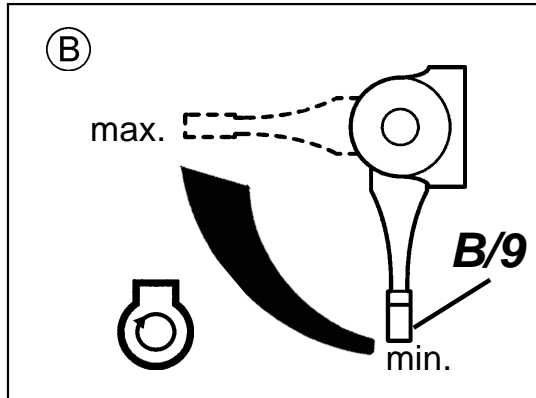
3

Idling-speed

Always ensure that idling-speed is adjusted correctly. At low speeds and with the speed control lever set to idle, the engine is supposed to run smoothly and without run-out.

Air Filter

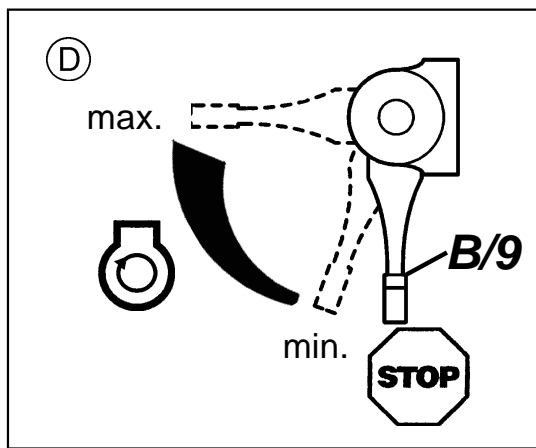
The air filter purifies the air intake. A clogged filter reduces engine output.



Speed Control Lever

(B) Version petrol engine

The speed control lever (B/9) on the steering handle is for stepless setting of engine speed from min. = idle to max. = full throttle.

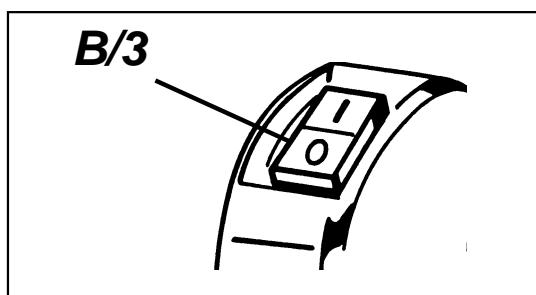


Speed Control Lever

(D) Version diesel engine

The speed control lever (B/9) on the steering handle is for stepless setting of engine speed from min. = IDLE to max. = FULL THROTTLE. The lever also is for shutting the engine off. For settings refer to Fig. L.

i The speed control lever also serves **to shut off the engine in an emergency situation**. Set the speed control lever to "STOP" for fast shut-off!



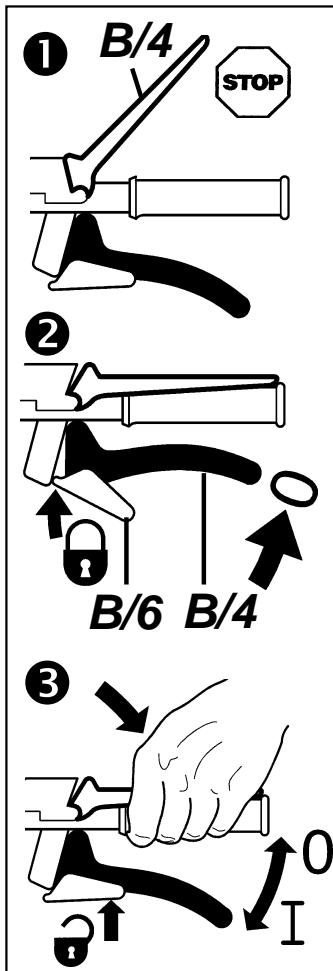
Engine Shut-off Switch

With the electric shut-off switch (B/3) the ignition is turned on or off.

Position "I" = Operation

Position "0" = Engine off

i The engine shut-off switch also serves **to shut off the engine in an emergency situation**. Set the switch to "0" for fast shut-off.



Safety circuit

Version petrol engine,
version diesel engine >59001942

1 Stop position: When releasing the safety shifting lever (B/4) the engine is turned off.

- Beware – engine keeps running due to centrifugal mass.

2 Start position: For starting the engine and for short breaks press down safety circuit lever, pull the clutch lever (B/5) and lock with pawl (B/6).

3 Operating position: To operate the machine press safety circuit lever (B/4).

Do not fasten safety circuit lever.



i Release the safety circuit lever in an emergency, the lever will automatically go to STOP position!

Safety Circuit

Version diesel engine <59001941

1 Stop position: When releasing the safety shifting lever (B/4) the engine is turned off.

Beware– engine keeps running due to centrifugal mass!

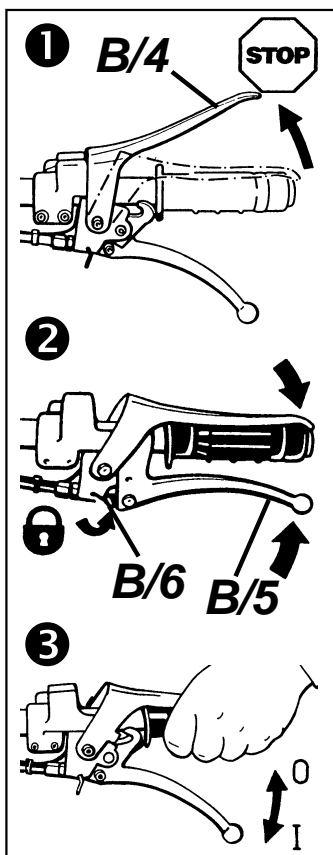
2 Start position: For starting the engine and for short breaks, press the safety circuit lever (B/4), pull the clutch lever (B/5) and lock with pawl (B/6).

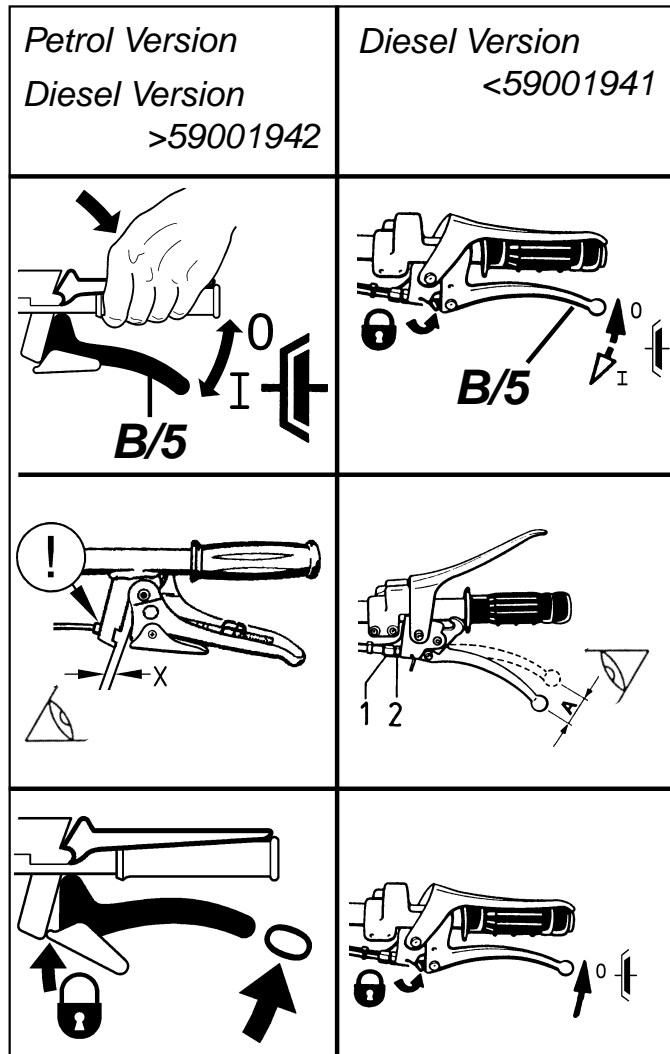
3 Operating position: For machine operation, press safety circuit lever (B/4).

Do not fasten safety circuit lever.



i The safety circuit lever also serves **to shut off the engine in an emergency**. Release the safety circuit lever for fast engine shut-off. The lever automatically goes to STOP position.





Clutch

The single disc dry clutch is operated via the clutch lever (B/5).

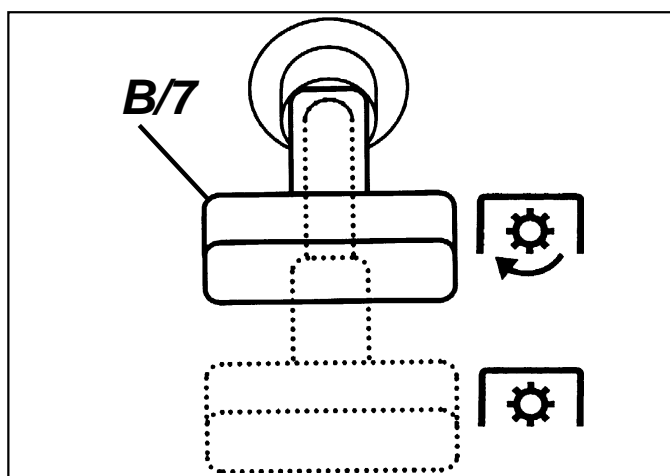
With clutch lever pulled up to position "0", the clutch is decoupled, i.e. the engine stops driving the machine.

- Watch for the correct clutch play to avoid clutch slipping away during operation.



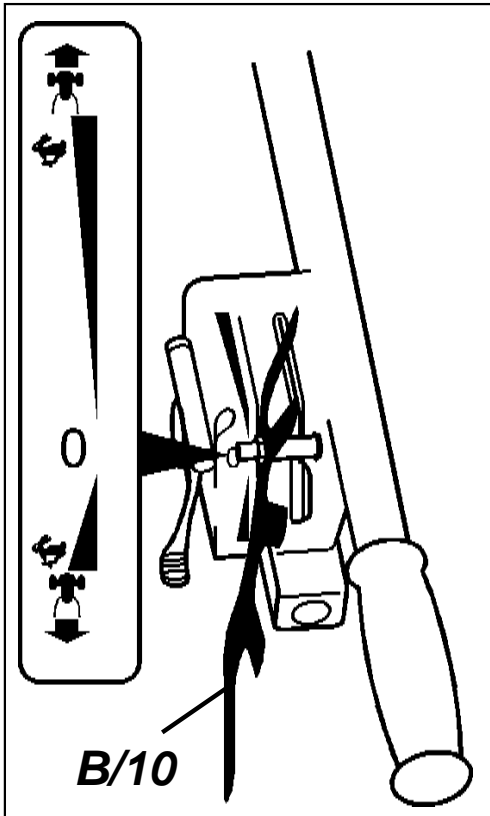
i Do not park the machine with the clutch pulled and the **engine running**. This may damage the clutch release bearing.

Ensure the lever is pulled and locked (pawl is locked in place) when you park the machine with the **engine stopped**, otherwise clutch problems might arise due to corrosion.



PTO-Shaft Connection

The speed-independent PTO (A/22) is connected with a connection mechanism (B/7). With the connection mechanism drawn backwards, the PTO-drive is connected, when slid forwards, the PTO-drive is disconnected.



Transmission

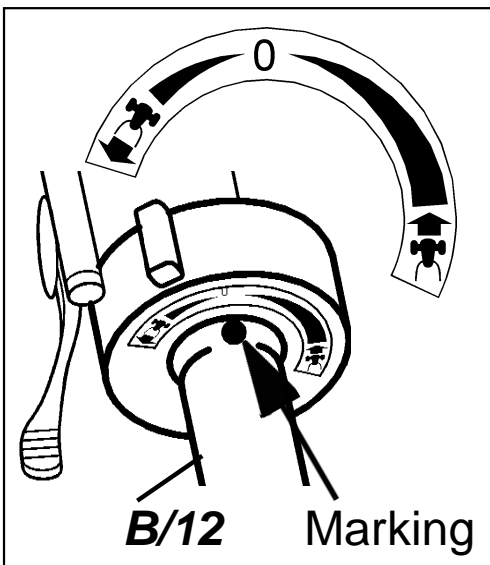
The agria tool carrier is equipped with a hydrostatic drive.

Setting the Driving Speed and Direction

Lever shift model

- The driving speed forward or reverse is steplessly set or changed with the forefinger or the thumb at the driving lever (B/10).
- The zero-position is set, when the marking at the driving lever is congruent with the "0" at the pictogram and is in contact with the spring detent.
- When turning the driving lever forwards, the driving speed is steplessly increased forwards and accordingly backwards, if the driving lever is turned backwards and down.

3



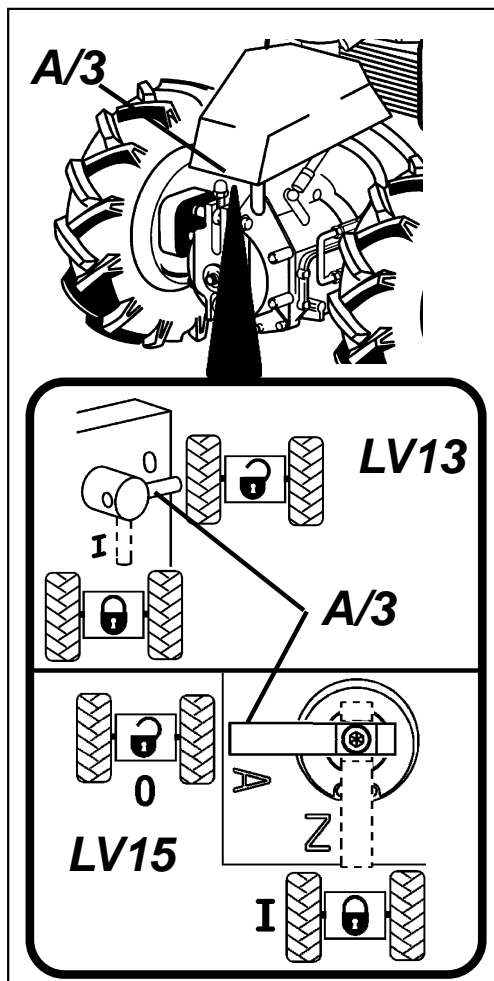
Twist-grip shift model

- The driving speed forward or reverse is steplessly set or changed with the twist grip (B/12).
- The zero-position is set, when the marking at the twist grip is congruent with the "0" at the pictogram.
- When swiveling the twist grip clockwise, the driving speed is steplessly increased forwards.
- When swiveling the twist grip anti clockwise, the driving speed is steplessly increased backwards.
- The locking lever can be used to prevent the twist-grip from turning accidentally.



 Locking lever = locked

 Locking lever = unlocked



Coasting operation

The machine can be coasted without engine, if the idle shift is opened (position "0").

The idle shift (A/3) is arranged at the right front of the tool carrier underneath the hood and can be operated by turning the shifting knob (or shifting lever).

The hydraulic drive is activated again, when the idle shift is closed (position "I").

Prior to starting the works, check shifting position! Pay attention to the version: Valve steering 13 (LV13) or valve steering 15 (LV15).

ⓘ Coasting operation or towing up to max. 4 km/h.

Trailing is not permitted!

Hydraulic Steering

With the hydraulic steering, the inner wheel at the curve becomes slower up to the standstill, the outer wheel at the curve keeps its velocity.

Steering

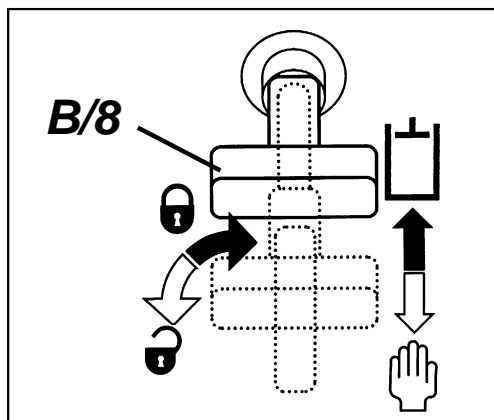
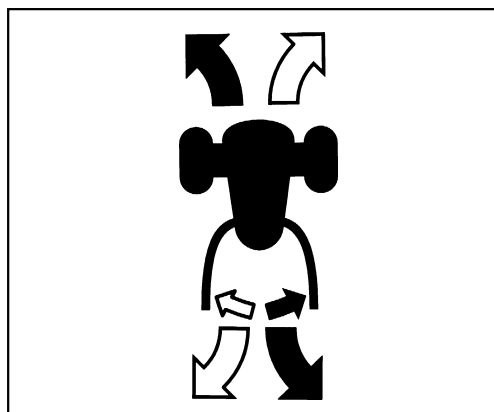
- By the steering movement at the steering handle, the hydraulic steering is activated with running engine.
- Steering only during driving, not upon a standstill.
- The stronger the steering movement, the quicker the hydraulic steering

Locking the Hydraulic Steering

By pulling and turning the shifting mechanism (B/8), the hydraulic steering is locked and steering is realized by muscular strength.

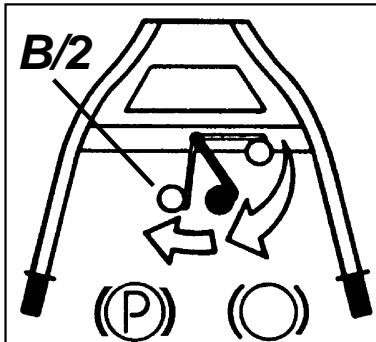
When the lock is opened, the hydraulic steering is connected again.

Use: Operation at the slope!
– similar to a differential lock!
or for lifting out an implement.



Central Brake

To slow down or park the machine on hilly ground, use the combined central parking brake.



● Central Brake

Swivel the eccentric lever (B/2) backwards and up – both drive-wheels are braked.

Release the eccentric lever and the lever swivels back to the original position – brake is released.

● Parking brake

Swivel the eccentric lever (B/2) backwards and up beyond the dead centre. The eccentric lever automatically comes to a stop – both drive-wheels are blocked.

To release parking brake, swivel eccentric lever back to original position – brake is released.



- Do not drive and brake at the same time.
- Prior to starting driving, absolutely disengage brake as otherwise risk of damage due to overpressure (failure of wheel motors).

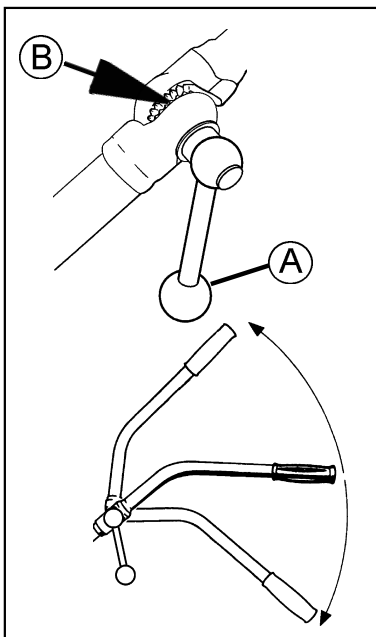
3

Steering Handle

⚠ Do never adjust operating handles during working – risk of accidents!

Steering Handle – Height Adjustment

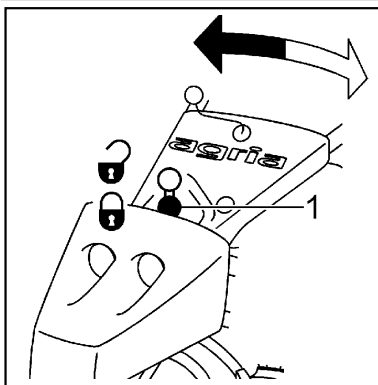
- Unfix clamping levers (A) on either side until the detents (B) are free.
- Bring left and right steering handle to the desired height and introduce into the respective detent.
- Tighten clamping levers (A) again.

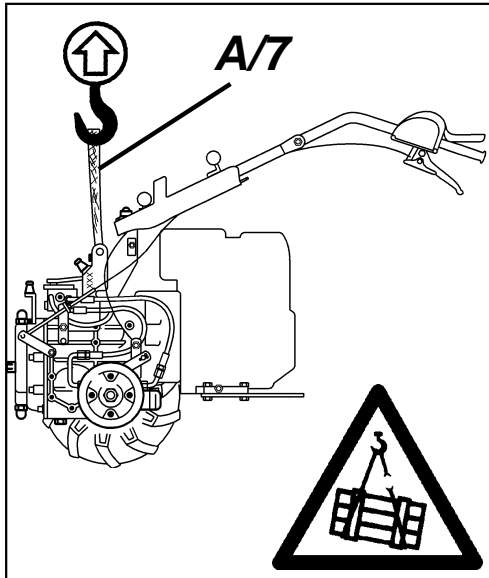


Steering Handle – Lateral Adjustment

From its normal position (centre position), the steering handle can be turned by about 30° to the left or right.

- Pull ball handle (B/1) upwards and keep it in position; then turn steering handle to the left or right into the desired position.
- Release ball handle and slightly move steering handle to the left and right until the fixing bolt is engaged.





Loading Belt

For loading the machine and for suspending the retaining rope for works on slopes, the loading belt (A/7) is provided. To that end, remove hood.

Check loading belt for damage; replace it, if necessary.

Do not use any loading devices with sharp edges (e.g. sharp-edged hooks, lugs etc.) .

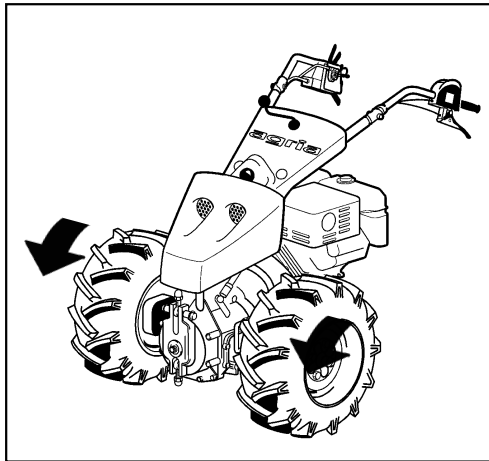
Never walk or remain under moving loads. Danger!

Fixing Points

For towing away, recovering and tying down and to ensure a safe transport, use the

fixing Points

at the connection flange and engine food guard.

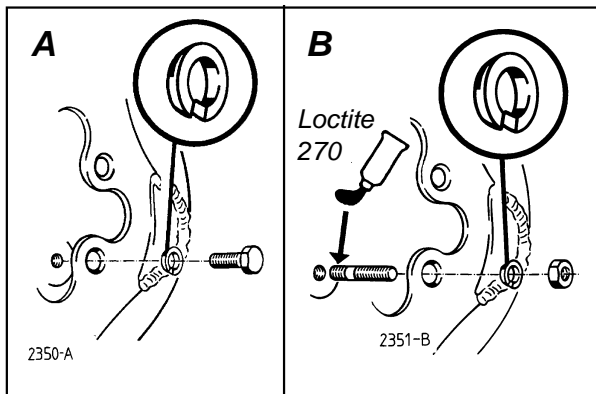


Drive-Wheels

For full tractive power, mount wheels with pointed parts of lugs showing in driving direction (wheels seen from above). Fit the countersunk side of spring-lock washer into countersink-type holes of disk wheel (see fig. "Wheel Attachment Bolts").

The wheels can also be mounted either on their inner or outer sides for variable track widths (narrow track / wide track – refer to track widths table, p14).

	Tyre	Tread Profile	Use	Item No.
	5.00-10	field tyre	general maintenance	0190 112
	5.00-12	field tyre	general maintenance	3490 411
	20x8.00-10	grass tyre	grass maintenance	3490 511
	21x11.00-8	terra tyre	general maintenance	3490 611
	23x8.5-12	wide-track field tyre	general maintenance	5990 611
	23x10.5-12	wide-track field tyre	general maintenance	5990 711



i To avoid damage to the brake system:

- Spring washer with ball-shaped side absolutely required.
- Only use screw of original length.

Wheel Attachment Bolts

Version **A** wheel bolt with spring-lock washer.

Version **B** locking bolt with spring-lock washer and wheel nut.

Screw short thread end of locking bolt tightly into hub, if possible, glue with LOCTITE 270 (or similar glue).

Fit countersunk side of spring-lock washer onto disk wheel.

On a new machine or after wheel change, re-tighten wheel bolts and nuts after the first 2 operating hours with **100 Nm**. Re-tighten bolts and nuts in each maintenance.

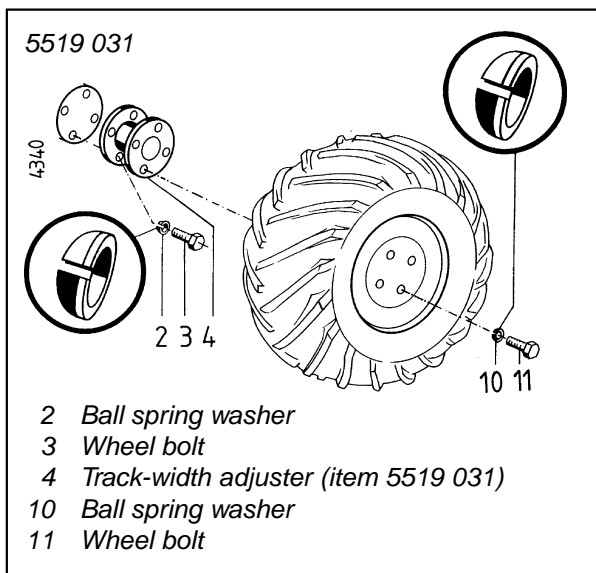
3

Snow Chains

When working with snow chains fitted on wheels, observe manufacturer's instructions, make sure there is sufficient clearance between chains and machine parts.

Wheel-Track Adjustment System

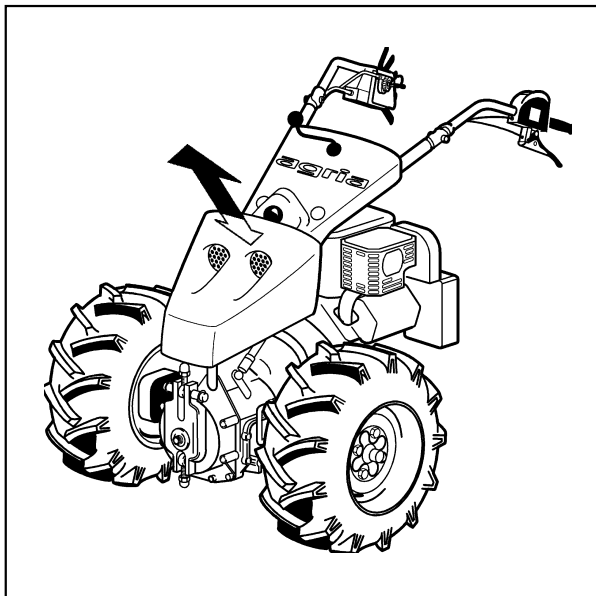
- Item 5519 031 used to fit terra tyre drive wheels 21 x 11.00-8 TG.



- 2 Ball spring washer
- 3 Wheel bolt
- 4 Track-width adjuster (item 5519 031)
- 10 Ball spring washer
- 11 Wheel bolt

Drive-Wheels for Slopes

i It is recommended to use twin wheels or strake wheels for mowing areas on **extremely steep slopes**.



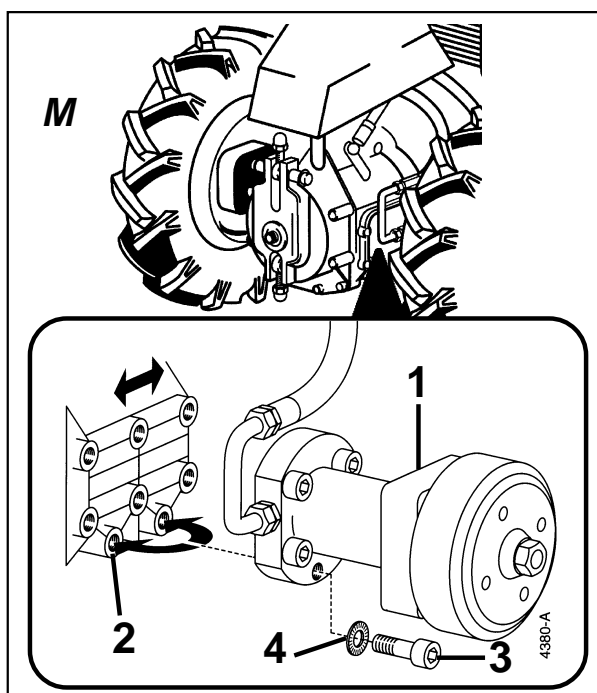
Hood

Remove Hood

- Lift rear end of hood.
- Lift front end of hood and completely remove it.

Placing Hood

- Place front and rear of hood with the rubber cups onto the ball heads.
- By slightly applying pressure to the rear and front of the engine cowling, have the ball cups engage in the ball heads.



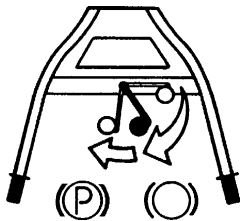
Portal Axle Adjustment

To improve the weight distribution with heavy implements, the axle can be displaced forwards.

- For that purpose, install the complete wheel motors (M/1) to the front flange bolting template (M/2).
- Previously, clean flange bolting template.
- Do not unfix hydraulic lines and bowden cables!
- Tighten attachment bolts (M/3) with 45 Nm.
- Befestigungsschrauben (M/3) mit 45 Nm festziehen

Continuous portal axle adjustment (option for article 5939 011)

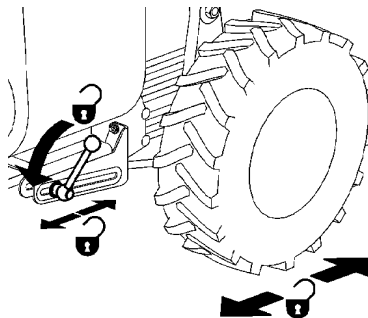
1



Adjustment to front or rear

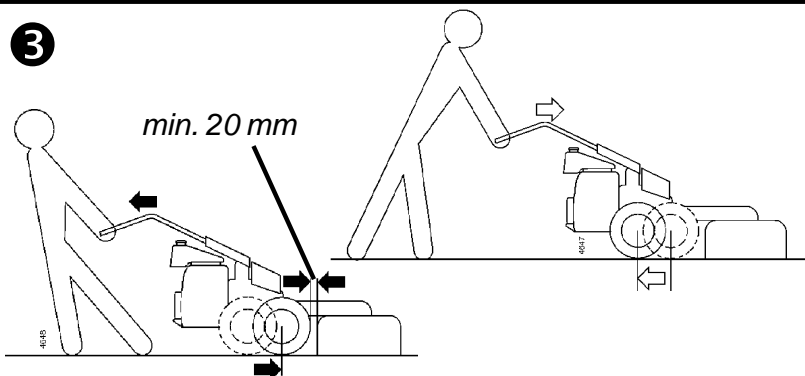
1 Pull parking brake (P)

2



2 Release ball handle lever

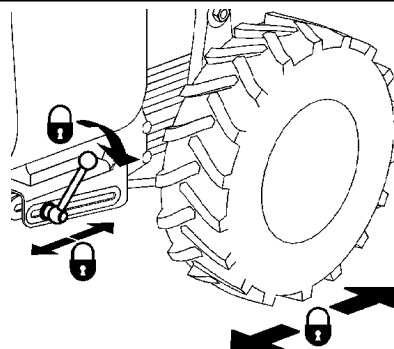
3



3 Pull machine back or move machine forward on steering spar

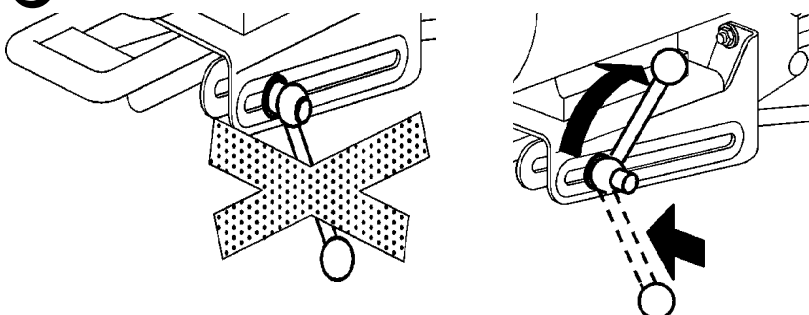
i Min. clearance to attachment for drive wheels 20 mm!

4



4 Pull ball handle lever

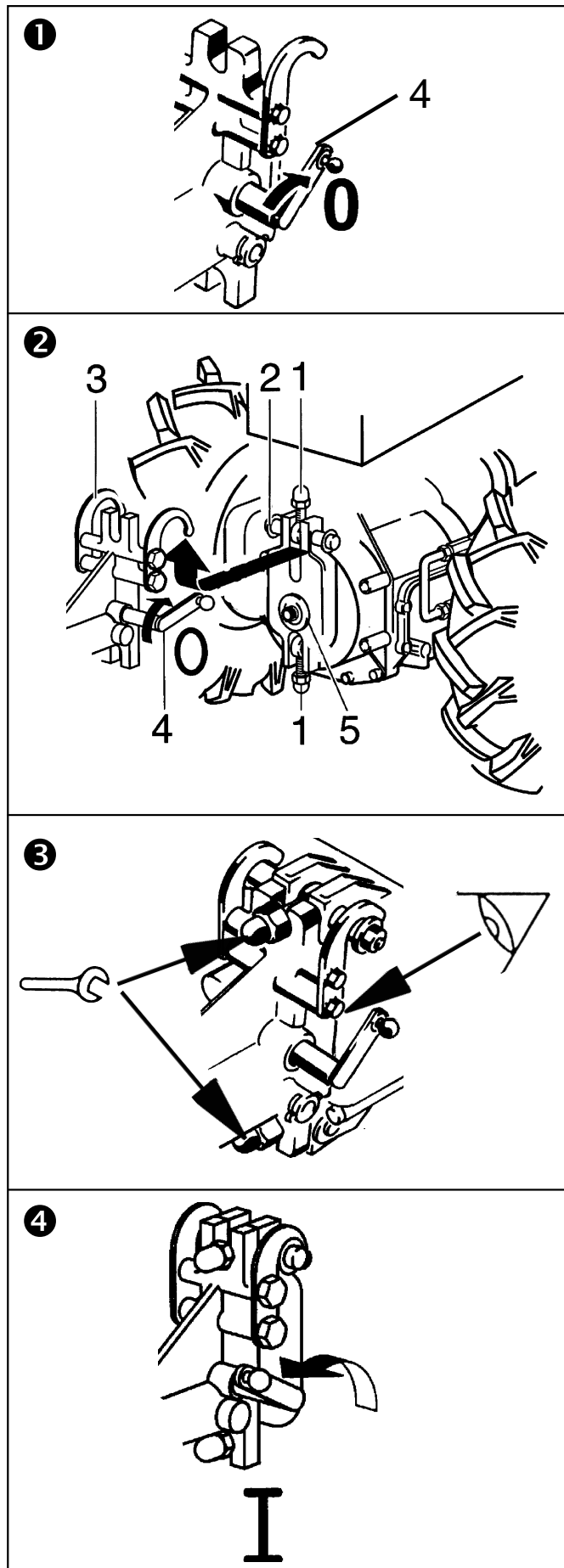
5



5 Ball handle lever must not point downward

● Press ball handle lever axially inward - until it unlocks - and turn upward

3



Mounting and Dismounting Implements



Only mount and dismount implements with engine off.

Mounting Implements:

- Ensure that coupling surfaces on tool carrier and implement are clean.

1 For PTO driven implements, set shift lever (4) on implement to position "0".

2 Slide pegs (2) of base machine into hooks (3) of implement.

3 Fold both eye bolts (1) over coupling flange.

Attention:

- Make sure flanges (5) are properly centred and flat fitted.
- Tighten cap nuts evenly.

4 For PTO-driven implements: Set shift lever (4) at the implement to "I" – shifting takes place at the base machine.

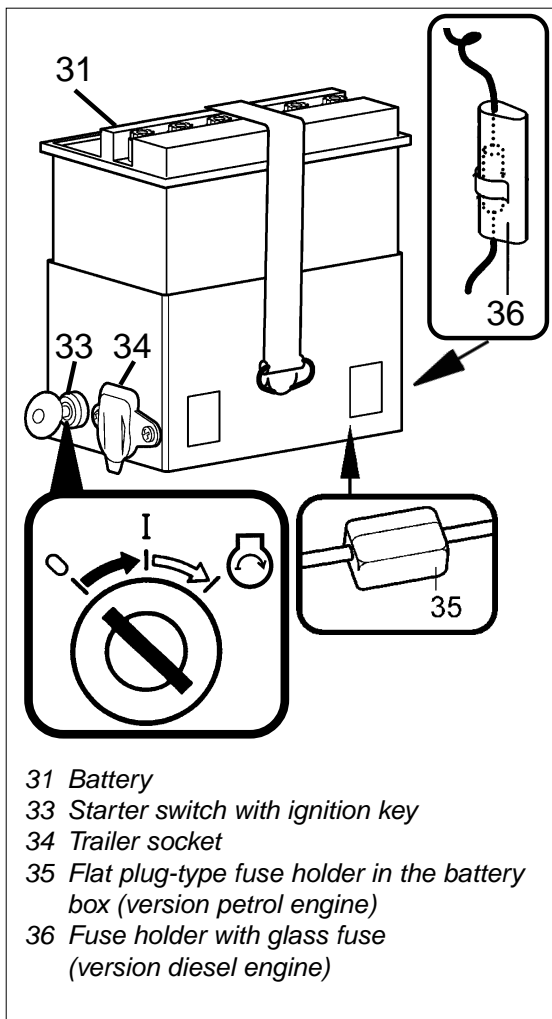
For dismounting, proceed in reverse order.

Battery

There is no dry pre-charging of batteries on the new machines or trailers. Therefore the battery must be filled with accumulator acid and charged (charging current = 1/10 of battery capacity).



Note manufacturer's instructions!



- 31 Battery
- 33 Starter switch with ignition key
- 34 Trailer socket
- 35 Flat plug-type fuse holder in the battery box (version petrol engine)
- 36 Fuse holder with glass fuse (version diesel engine)

Starter Switch

The ignition start switch (33) for electric starter has 3 settings

0 = Charging current off, key removable

I = Operation



= Start position, ignition key automatically goes into operating position

Warning Signal

The warning signal sounds when ignition key is in position "I" and the engine is at a standstill, and goes out as soon as the engine runs and the generator starts charging the battery.

It also goes out when the ignition key is in position "0" or is removed.

If the warning signal sounds while the engine is running, the generator does not charge the battery correctly

→agria - Service←



Do not set ignition start switch to "0" while the engine is running. This can damage the charging regulator.

Fuse

A fuse - for version petrol engine = (35), for version diesel engine = (36) - is located between the regulator and electric starter to protect the regulator and generator from a short circuit induced from outside.

Replace the fuse if it is defective. To do this, open the fuse holder (version petrol engine: take out the battery beforehand) - ensure to provide another spare fuse in time.

Commissioning

Please note that durability and operational safety of the engine depend to a large extent on its breaking-in. Always allow a cold engine to warm up for some minutes and never run it at full throttle at the beginning.

Please note: for the first **20** hours of operation (break-in period) do not use the engine at full power.

Make sure you check and maintain air filters regularly and use clean fuel. Only use branded petrol.

Only use fresh, clean fuel (not older than 3 months) and approved fuel cans to be purchased in special shops. Rusty sheet metal cans or fuel cans not suited for petrol are not permitted.

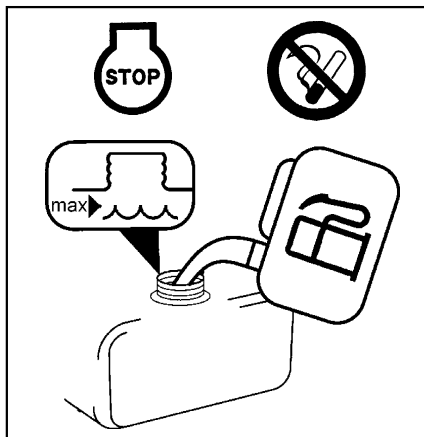
For the first commissioning or after longer periods of no operation, fill fuel tank to maximum to avoid starting problems.



Be careful when dealing with fuel.

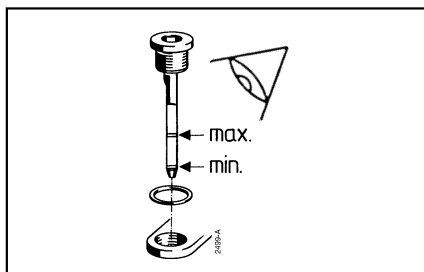


Fuel is easily inflammable and explosive in certain conditions!

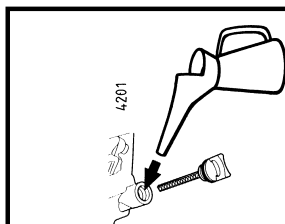


- Do not refill in closed rooms.
- Before each fuel fill, shut off the engine and wait until it has cooled off.
- Never refill close to open fire, inflammable sparks or hot engine parts.
- Do not smoke during filling!
- Do not spill any fuel, use a proper filling device.

Do not cause fuel tank to overflow, but leave a 5 mm margin for the fuel to expand.



- Check transmission oil level (see page 53).



Note: For reasons of transport, the engine is not filled completely with engine oil!

Before you operate the engine the first time, fill in engine oil (see page 46)!

Commissioning

Please note that durability and operational safety of the engine depend to a large extent on its breaking-in. Always allow a cold engine to warm up for some minutes and never run it at full throttle at the beginning.

Please note: for the first **20** hours of operation (break-in period) do not use the engine at full power.

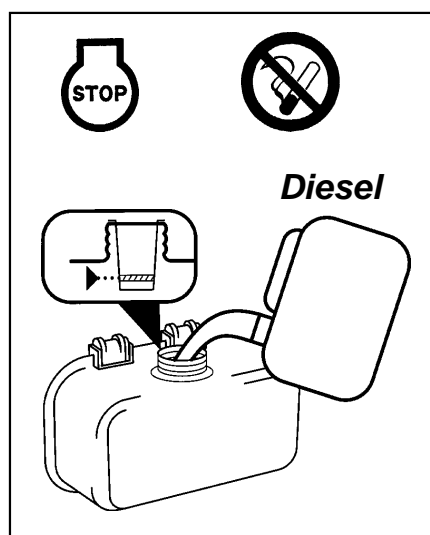
Make sure you check and maintain air filters regularly and use clean fuel. Only use branded Diesel, ensure timely provision of “winter Diesel fuel” (see page 9).

Only use approved fuel cans to be purchased in special shops. Rusty sheet metal cans or fuel cans not suited for petrol are not permitted.

For the first commissioning or after longer periods of no operation, fill fuel tank to maximum to avoid starting problems.

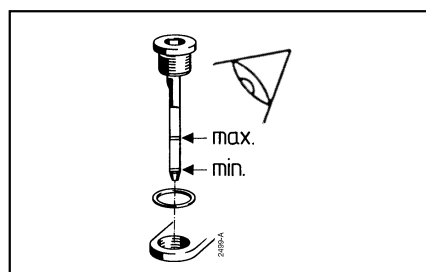


Be careful when dealing with fuel.

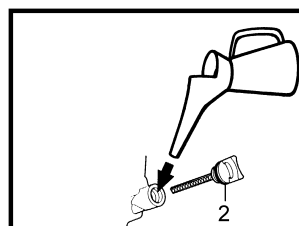


- Do not refill in closed rooms.
- Before each fuel fill, shut off the engine and wait until it has cooled off.
- Never refill close to open fire, inflammable sparks or hot engine parts.
- Do not smoke during filling!
- Do not spill any fuel, use a proper filling device.

Do not fill the fuel tank beyond the red mark on the filler strainer.



- Check transmission oil level (see page 53).



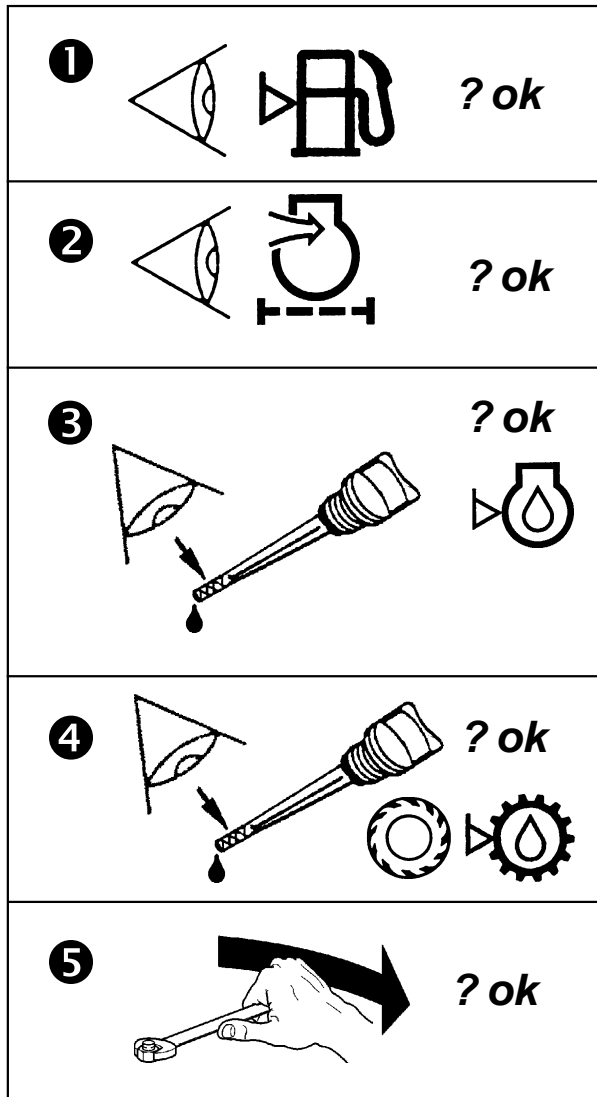
Note: For reasons of transport, the engine is not filled completely with engine oil!

Before you operate the engine the first time, fill in engine oil (see page 48)!

4. Commissioning and Operation

Petrol Engine Version

agria



Before starting the Engine

① Sufficient fuel is filled into the tank?

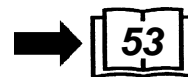
② Air filter clean?



③ Check the engine oil level.



④ Check transmission oil level.



⑤ Check all bolts and nuts for tight fit.



4

⚠ Only take machine into operation with all protective devices mounted and positioned to provide protection!

Careful when starting the engine in closed rooms!

Ensure good ventilation and fast escape of exhaust fumes. Exhaust fumes contain carbon monoxide which acts toxic when inhaled.

Do not touch the hot engine - danger of burns!

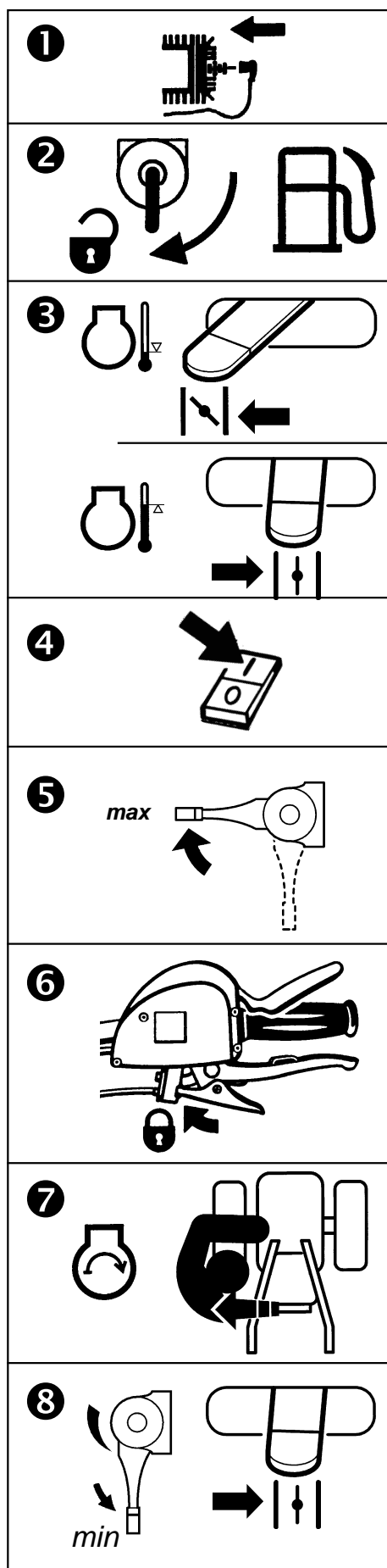
⚡ Do not touch or remove the ignition line and spark plug connector while the engine is running.

4. Commissioning and Operation

Petrol Engine Version/Recoil Starter

agria

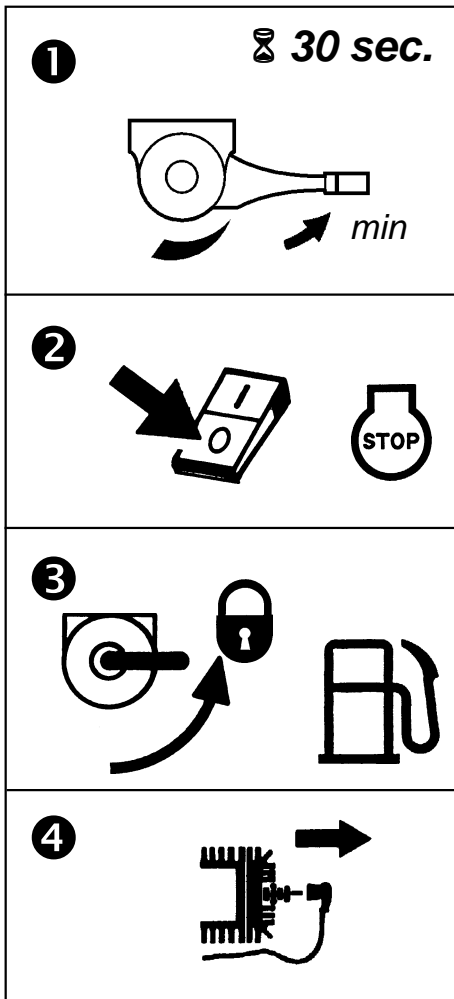
4



Starting Petrol Engine Recoil Starter Version

- ❶ Mount spark plug connector (C/1).
- ❷ Open the fuel tap (C/13).
- ❸ **Cold engine:** put CHOKE lever (C/20) to "CHOKE" position.
 • **Warm engine:** leave CHOKE lever in normal operating position.
- ❹ Set engine-OFF switch (B/3) to operating position ("I").
- ❺ Set speed control lever (B/9) to max.
- ❻ Pull hand clutch lever (B/5) and lock pawl (B/6) - start position.
- ❼ Start engine from a position outside the danger zone:
 Pull starting-rope on handle (C/6) until you feel starter clutch engage. Then **pull hard and fast** to start the engine. After the start, carefully let rope glide back. Do not let snap.
- ⓘ **Trailing is not permitted!**
- ❽ Once the engine has started, set speed control lever to min. and let engine warm up for some time. Slowly push choke back into operating position, if necessary.

Shutting off Petrol Engine Recoil Starter Version



1 Set speed control lever to idle position and let engine run idle for approx. half a minute.

2 Set engine shut-off switch to "0".

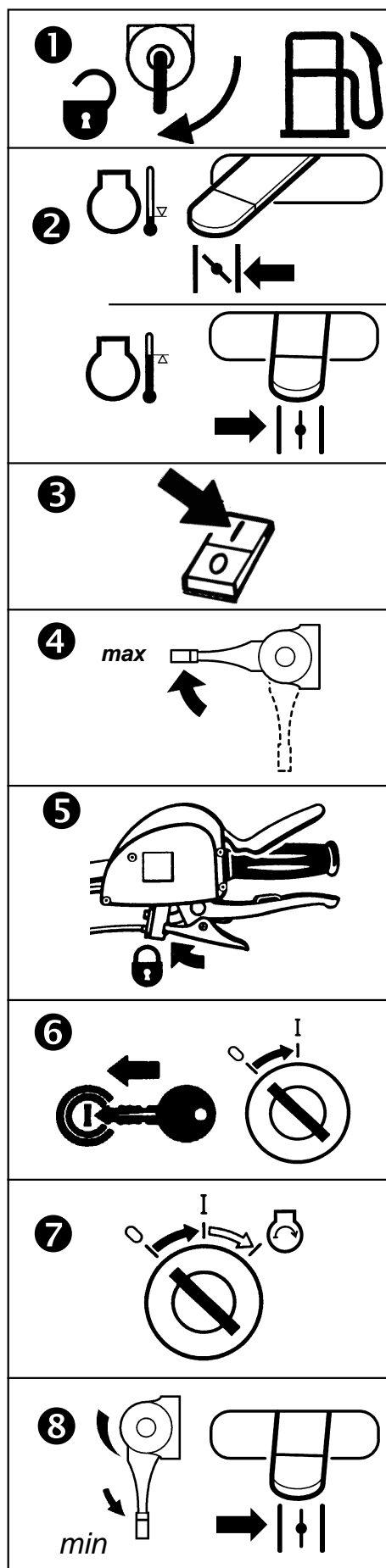
3 Close the fuel tap.

4 Secure tool carrier against unauthorized use – disconnect spark-plug connector.

4

i Engine shut-off switch (B/3) also serves as **emergency off-switch**. If necessary, set switch to "0" to turn engine off.

i For parking the machine for longer periods of no operation, do not use engine shut-off switch to shut off engine, but close fuel taps and let engine run until it slowly comes to a complete stop. This ensures carburetor to be empty and no resin residue to deposit.



Starting Petrol Engine E-Starter Version

- ❶ Open the fuel tap (C/13).
- ❷ **Cold engine:** put **CHOKE** lever to “**CHOKE**” position (D/20).
 • **Warm engine:** leave **CHOKE** lever in normal operating position.
- ❸ Set engine shut-off switch (B/3) to operating position (“I”).
- ❹ Set speed control lever (B/9) to max.
- ❺ Pull clutch lever (B/5) and lock pawl (B/6) – start position.
- ❻ Insert key into ignition-start-switch (C/33) and turn right to position “I” - even when started using the reverse starter.
 • Warning signal sounds.
- ❼ Turn ignition key further to the right to position “**START**”

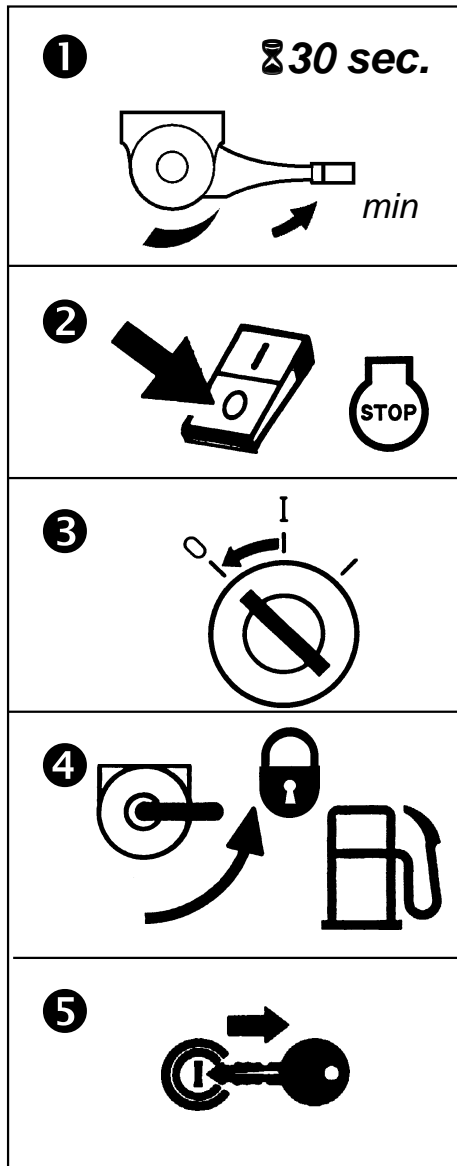
As soon as the engine starts, let go ignition key – it automatically moves back into position “I” and the warning signal goes out.

If the engine does not start and re-start is necessary, turn key back to position “0” to repeat start (re-start lock).

❶ **Trailing is not permitted!**

- ❸ Once the engine has started, set speed control lever to min. and let engine warm up for some time. Slowly push choke back into operating position, if necessary.

Shutting off Petrol Engine E-Starter Version



❶ Set speed control lever to idle position and let engine run idle for approx. half a minute.

❷ Set engine shut-off switch to “0”
- warning signal sounds.

❸ Turn key back to position “0” – warning signal goes out.

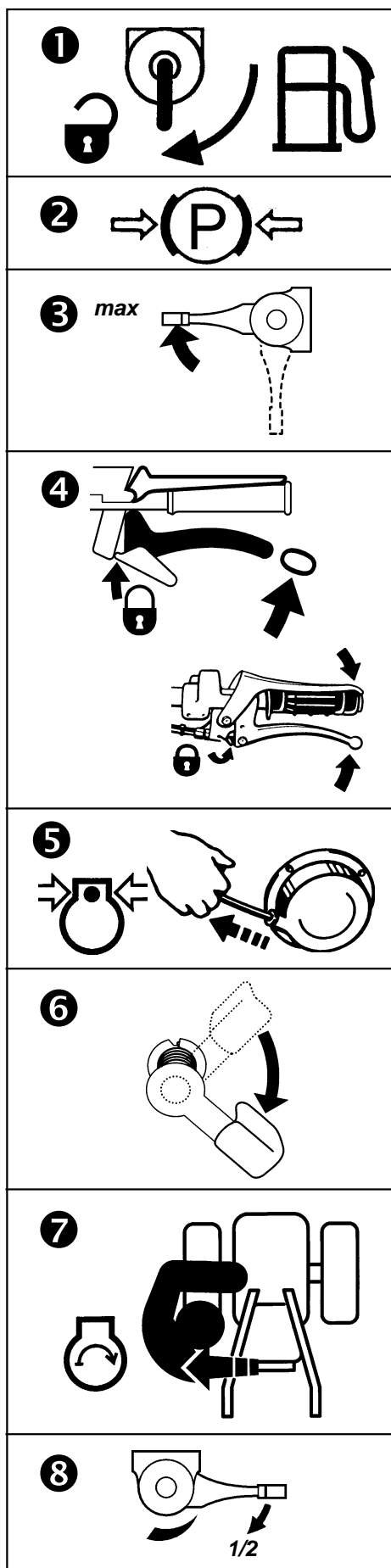
❹ Close the fuel tap.

❺ Secure tool carrier against unauthorized use – disconnect ignition key.

i Engine shut-off switch (B/3) also serves as **emergency off-switch**. If necessary, set switch to “0” to turn engine off.

i For parking the machine for longer periods of no operation, do not use engine shut-off switch to shut off engine, but close the fuel tap and let engine run until it slowly comes to a complete stop. This ensures carburetor to be empty and no resin residue to deposit. Turn key back to position “0” and disconnect it.

Starting Diesel Engine Recoil Starter



❶ Open the fuel tap (D/3).

❷ Engage parking brake (B/2) to improve machine stability.

❸ Set speed control lever (B/9) to "max." .

❹ Set safety circuit lever (B/4) and clutch lever (B/5) to start position and lock with pawl.

❺ Pull starting-rope on handle (D/6) until you feel resistance (piston in compressing position).

❻ Pull decompression rope (D/8) downwards.

❼ Start engine from a position outside the danger zone:

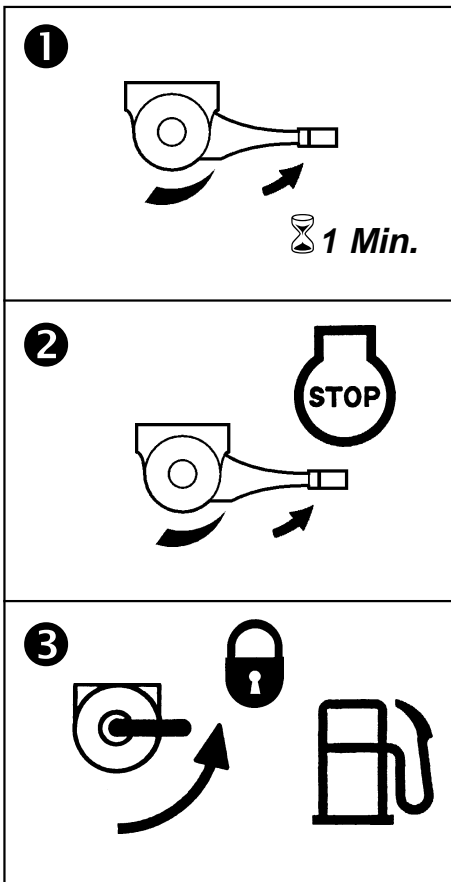
Pull starting-rope (D/6) hard and fast to **start the engine. After the start, carefully let rope glide back. Do not let snap.**

- Decompression automatically goes back in former position.

❽ Once the engine has started, slowly push speed control lever to centre position and let engine warm up for some time.

- In case the engine does not start, repeat the starting procedure.

Shutting off Diesel Engine Recoil Starter



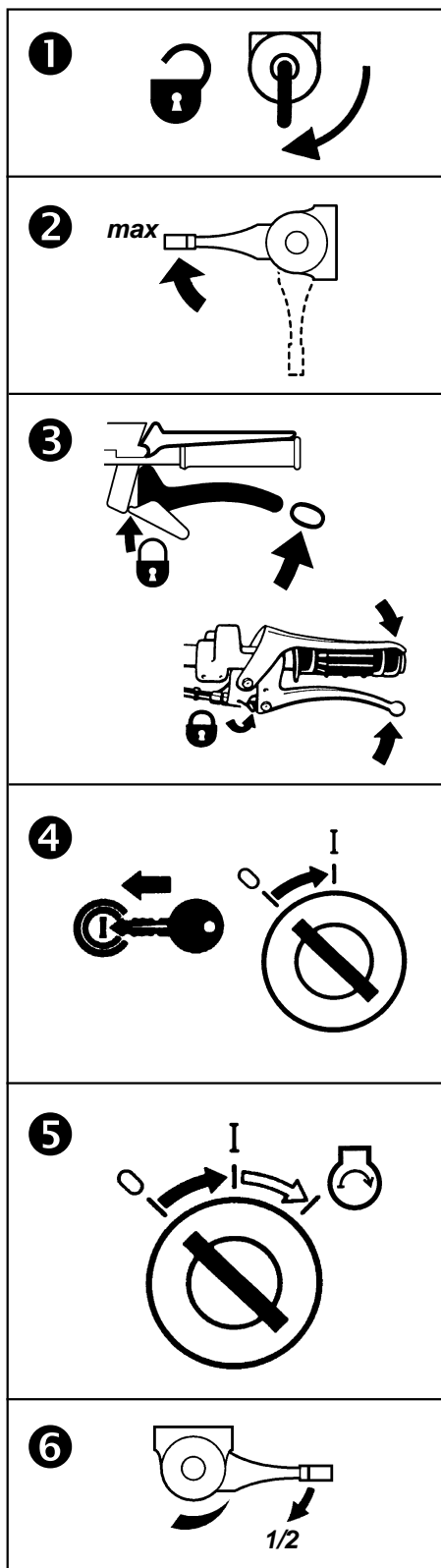
1 Before you shut off the engine let it run at increased idling speed for 1 minute to cool down and to avoid carbon to deposit on the injection valve. This en-sures continued and reliable operation.

2 Set speed control lever (B/9) to "STOP".

i For shutting off the engine never activate decompression, as this might damage the valves.

3 Close the fuel tap (D/3).

Starting Diesel Engine E-Starter Version




1 Open the fuel tap (D/3).

2 Set speed control lever (B/9) to “max.”

3 Set safety circuit lever (B/4) and clutch lever (B/5) to start position.

4 Insert key into ignition-start-switch (D/33) and turn right to position “I” - even when started using the reverse starter.

- Warning signal sounds.

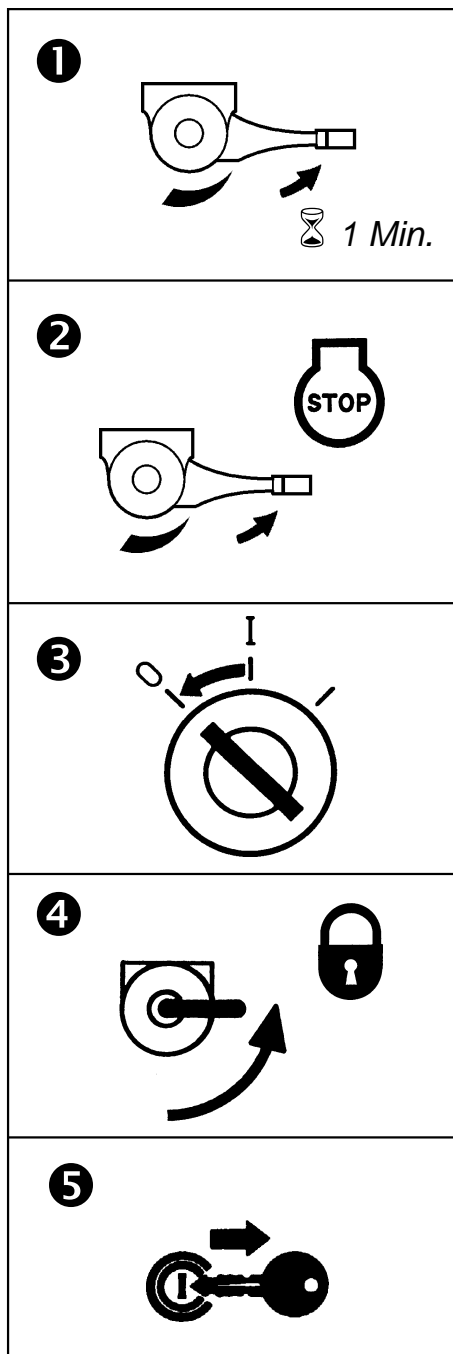
5 Turn ignition key further to the right to position “START” .

As soon as the engine starts, let go ignition key – it automatically moves back into position “I” and the warning signal goes out.

If the engine does not start and re-start is necessary, turn key back to position “0” to repeat start (re-start lock).

6 Slowly move speed control lever to centre position (half throttle) and let engine warm up for some time.

Shutting off Diesel Engine E-Starter Version



1 Before you shut off the engine let it run at increased idling speed for 1 minute to cool down and to avoid carbon to deposit on the injection valve. This ensures continued and reliable operation.

2 Set speed control lever(B/9) to “STOP” - warning signal sounds.

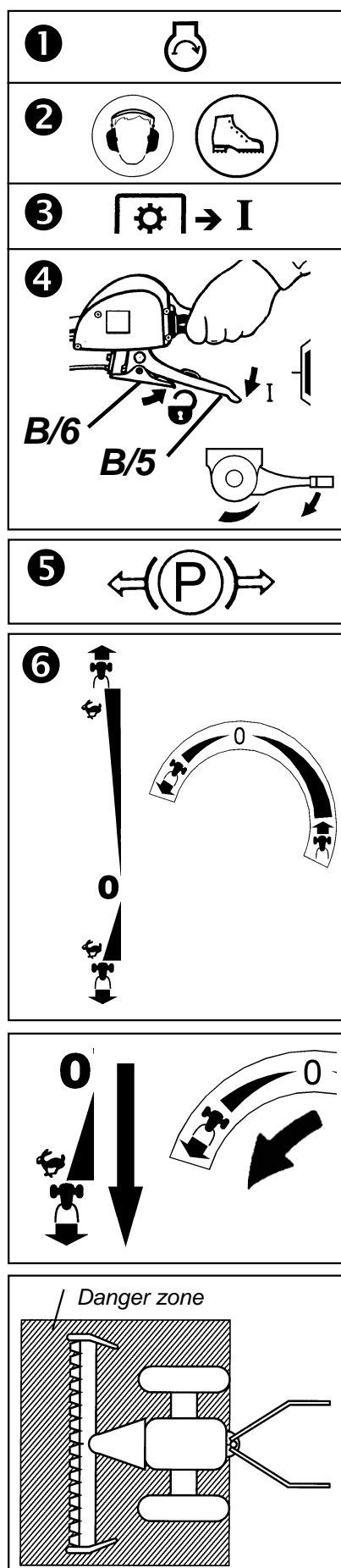
i For shutting off the engine never activate decompression, as this might damage the valves.

3 Turn key back to position “0” – warning signal goes out.

4

4 Close the fuel tap (D/3).

5 Secure tool carrier against unauthorized use – remove ignition key.



Operating the Machine

Check safety circuit function → **56**
! - Only operate the machine if, safety circuit works!

1 Start the engine as specified in chapter "Starting the Engine".

2 Wear individual protective ear plugs and solid shoes.

3 For operation with PTO-powered attachments: Switch on PTO using the PTO shifting mechanism (B/7).

4 Pull slightly clutch lever (B/5), unlock pawl (B/6) and slowly let go while pressing the throttle.

! **Carefully engage the clutch, the exact 0-position of the twist grip or driving lever is not always reached – the implement will possibly start directly!**

5 Release the parking brake.

6 Set driving speed with the driving lever (B/10) or the twist grip (B/12) according to the conditions and requirements.

Changing the driving direction from forward to reverse:

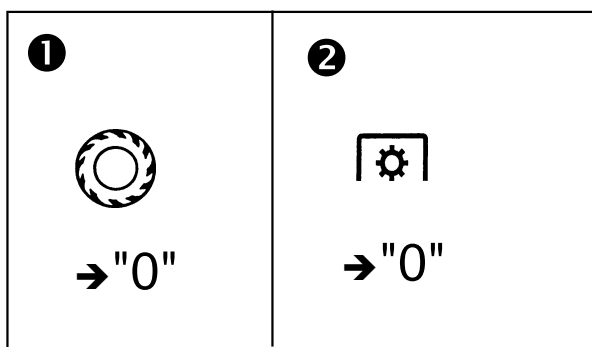
Slowly move driving lever (B/10) or twist grip (B/12) to the rear bottom.

Proceed vice versa for direction change from reverse to forward.

! **Never leave tool carrier unattended with the engine running.**

Danger Zone

! **Keep out of the machine's danger zone during starts and operation.**

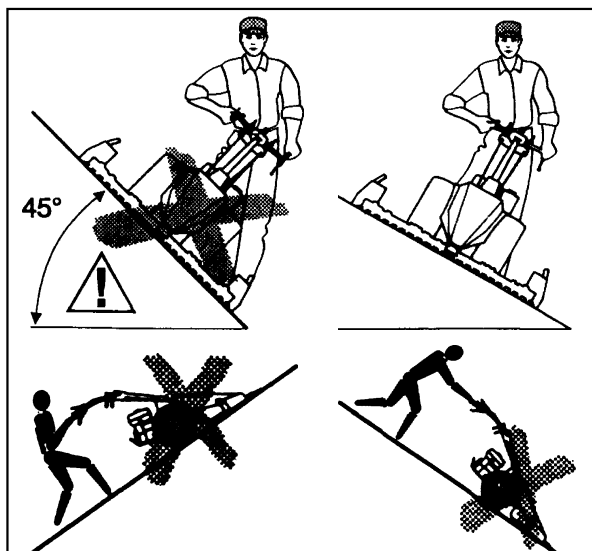


Note for Mowing

After mowing or in case of grass clogging:

① Set driving lever to idle-position. The mower comes to a stop but not the knives, thus freeing the cutter bar from grass.

② Set PTO shifting mechanism to position "0".

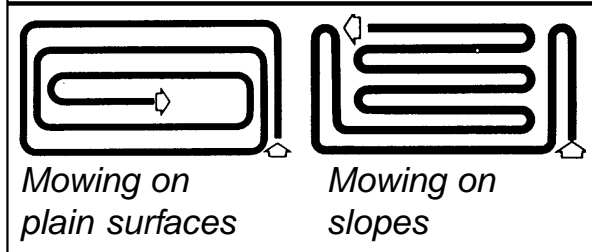


Working on Slopes

To prevent the tool carrier from sliding on slopes make sure it is secured by another person using a bar or a rope. This person must stay at a higher position than the vehicle and at a safe distance from the attachment at work.

If possible, always work across the slope.

4



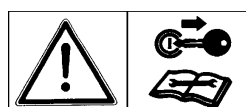
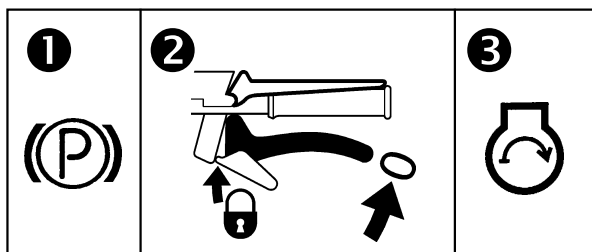
Starting the Engine on Slopes

If the engine comes to a halt while working and re-start becomes necessary, proceed as follows:

① Engage parking brake.

② Move clutch lever and safety circuit lever to start position.

③ Re-start engine.



If cleaning becomes necessary during operation, the engine must be shut off and the spark plug connector disconnected or the ignition key removed for safety reasons.



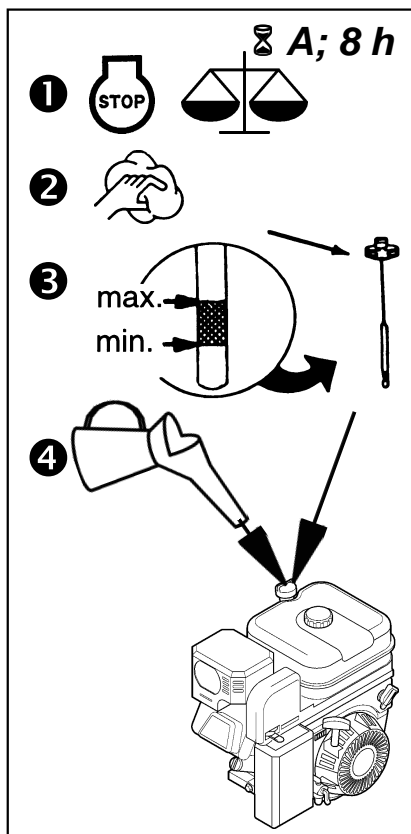
Apart from observing all operating instructions, it is also important to pay attention to the following maintenance instructions.



Only do all maintenance work with the engine shut off and spark plug connector disconnected.



When working on mowing knives, wear safety gloves!



Engine

Checking Oil Level

● **each time you take up operation and after every 8 operating hours,**

① **only with engine shut off and in horizontal position.**

② **Clean oil dipstick (1) and surrounding parts.**

③ **Remove oil filler plug, clean dipstick, with a clean cloth and screw into oil tank, take out dipstick and read oil level.**

④ **In case oil level is below lower mark "min.", refill engine oil (refer to "Specifications") until oil level reaches mark "max.".**

Changing Engine Oil

The first oil change is after 5 operating hours, after that change the oil under high loads after every 25 operating hours, otherwise every 50 operating hours or before the season starts

- while engine is still warm, but not hot
- danger of burns!

● **Clean oil filler plug, drain plug and surrounding parts.**

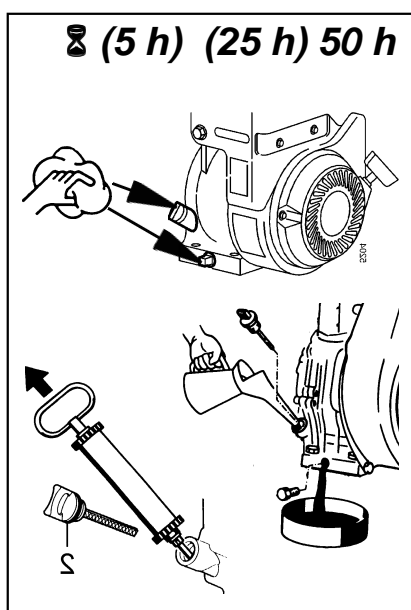
● **Open the drain plug and drain the oil into a suitable container or use a suction pump to remove the oil through the filler neck.**

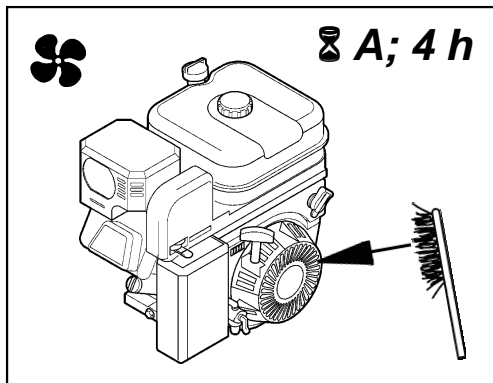
● **Ensure the waste oil is disposed of properly!**

① **Check sealing washer for good condition and exchange, if necessary. Tighten oil drain plug!**

Fill in fresh engine oil.

- For engine oil quality refer to "Specifications".

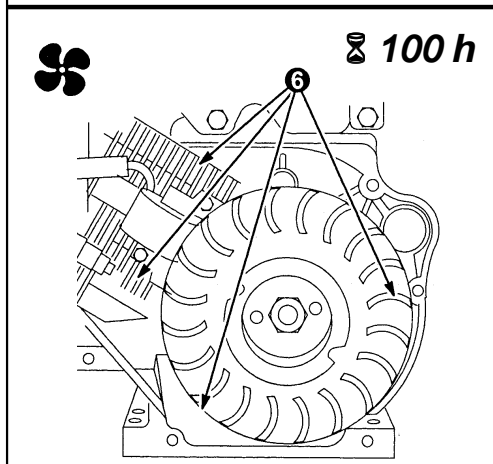




Cleaning the Cooling System

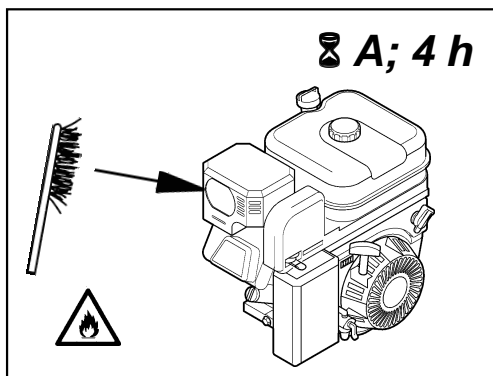
After mowing for longer periods of time, clogging of plants and dust may occur in the cooling system. Sustained operation with the cooling system clogged lets the engine heat up and causes damage.

- Always check cooling-air screen (C/5) and remove dirt and plants sucked in.



- Clean fan system after every **100** hours of operation or at least **once per year**, preferably before the season starts. Take off fan case and clean cooling fins on both, cylinder and cylinder head, clean guiding plates and cooling-air screen (C/6), both serving for good air circulation.

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Exhaust System

Check exhaust system (C/18) on a regular basis for plant trash and clean, if necessary. Otherwise **danger of fire** results.

Check each time before you put the tool carrier into operation.

5

All other maintenance on the engine

➔  Briggs & Stratton Engine



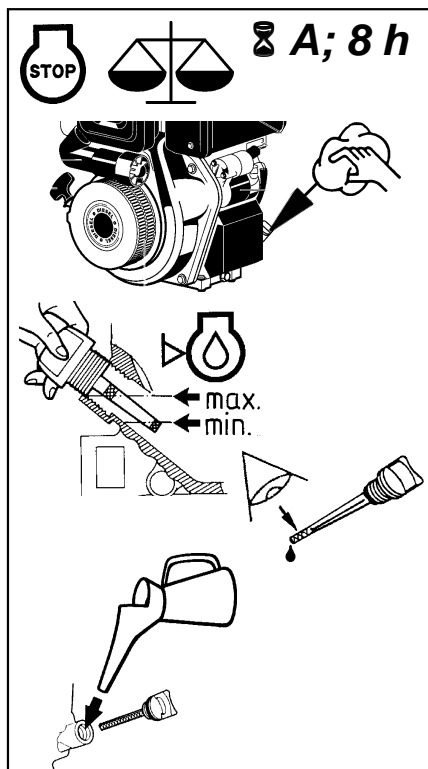
Apart from observing all operating instructions, it is also important to pay attention to the following maintenance instructions.



Do all maintenance work only with the engine shut off!



When working on mowing knives, wear safety gloves!



Engine

Checking Oil Level

- **each time you take up operation and after every 8 operating hours,**
- **only with engine shut off and in horizontal position.**
- **Clean oil dipstick (1) and surrounding parts.**
- **Remove oil filler plug, clean dipstick, with a clean cloth and dip back into oil tank (do not screw in), take out dipstick and read oil level.**
- **In case oil level is below lower mark, refill engine oil (refer to "Specifications") until oil level reaches rim of oil filler neck.**

Changing Engine Oil

The first oil change is **after 50 operating hours**. Subsequent oil changes are after **200 operating hours** or **once a year**, depending on which period is completed first. At extreme strain and high temperatures, change oil after **100 operating hours**.

Only change oil while the engine is still warm, but not hot – **danger of burns!**

- **Clean oil filler plug, drain plug and surrounding parts.**
- **Open the drain plug and the filling plug and drain the oil into a suitable container!**
- **Each time you change engine oil, wash engine oil filter (D/13) in Diesel fuel.**
- **Fill fresh engine oil into the oil filling opening.**

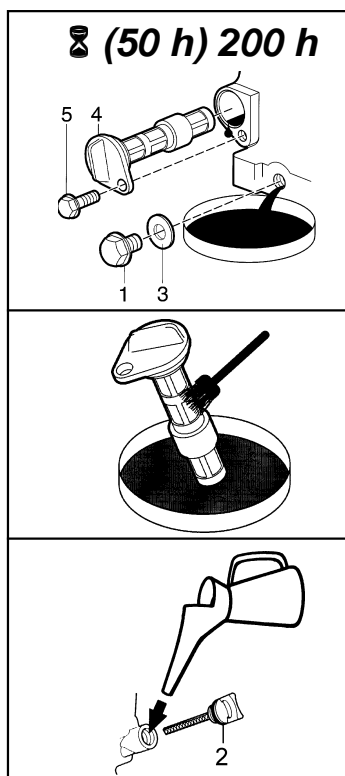


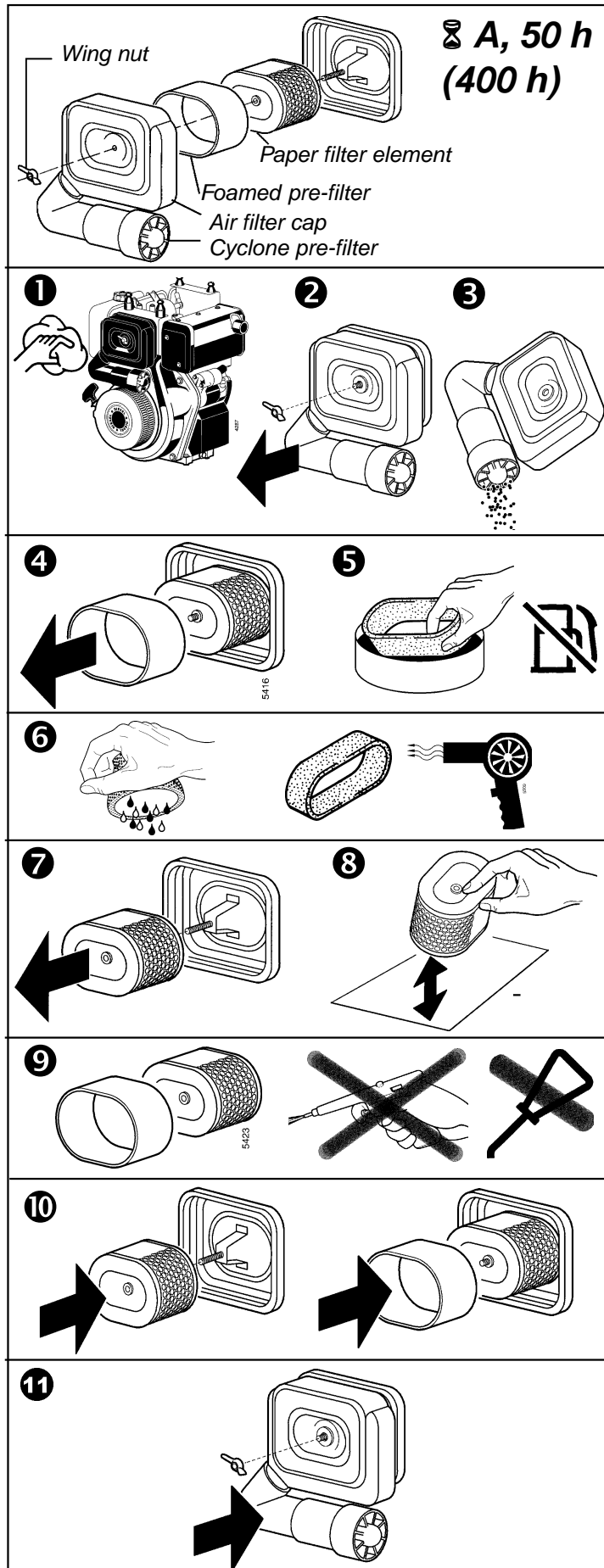
Check sealing washer for good condition and exchange, if necessary. Tighten oil drain plug!

Refer to Specifications for oil quantity and quality.

Use a funnel or a similar device to fill the oil reservoir.

5





Dry-Type Air Filter

When you take up operation check the air filter (D/4) on dirt, clean it if necessary.

Clean air filter (J/4) after a maximum of every **50** operating hours or at least after **3 months**, in case of heavy dust occurrence even earlier.

1 Clean air filter and outside surrounding parts.

2 Remove the wing nut and air filter cap including the cyclone pre-filter.

3 Rotate the air filter cap to allow any dirt inside the cyclone pre-filter drop out.

4 Carefully remove foamed pre-filter.

5 Wash foamed pre-filter in detergent and water (no petrol).

6 Squeeze foamed pre-filter and dry it.

7 Remove paper filter element

8 Slightly tap the element on a smooth surface.

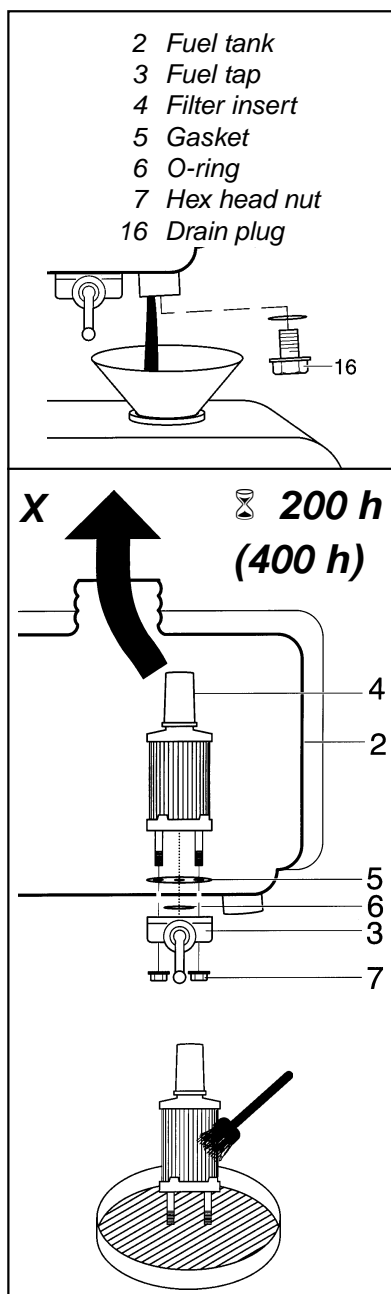
9 Do not use compressed air to blow out dust of foamed pre-filter and paper filter element. Do not treat with oil.

10 Re-insert the filter element and attach the foamed pre-filter.

11 Reposition air filter cap and fasten with wing nut.

Replace paper filter element after every **400** operating hours or **at least once a year**.

i Replace immediately damaged filter elements.



Draining fuel

- Provide a proper container with funnel or similar.
- Remove the drain plug (16) and drain the fuel into a proper container.
- Re-attach the drain plug (16) with O-ring and tighten it (check the O-ring and replace it if necessary)

Fuel filter

Clean the fuel filter insert at approx. **200** operating hour intervals, earlier, if engine output drops.

Filter disassembly/assembly:

- Drain the fuel.
- Remove hex head nuts (X/7)
- Remove the filter insert (X/4) from the fuel tank through the filling hole.
- Clean the fuel filter with diesel oil and replace the insert if it is damaged.
- Reverse the above order to reassemble the fuel filter after checking and replacing (if necessary) the gasket (X/5) and o-ring (X/6).
- Tighten the hex nuts.
- Fill fuel and check the fuel system for leakages.
- Bleed the fuel system.
- Exchange the fuel filter after **400** hours.

Bleeding the Fuel System

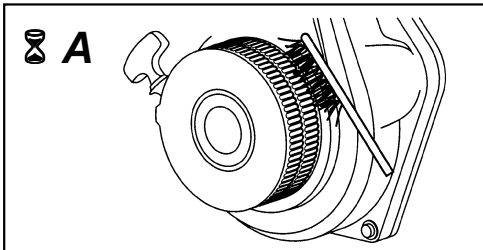
Bleeding the fuel system becomes necessary after the fuel tank was emptied completely or after exchanging or cleaning the fuel-filter/fuel hoses.

Although the engine is equipped with an automatic bleeding system, proceed as follows:

- Fill diesel fuel into fuel tank.
- Crank engine several times with recoil starter or electric starter and start engine.
- Let engine run for approx. 1 minute.

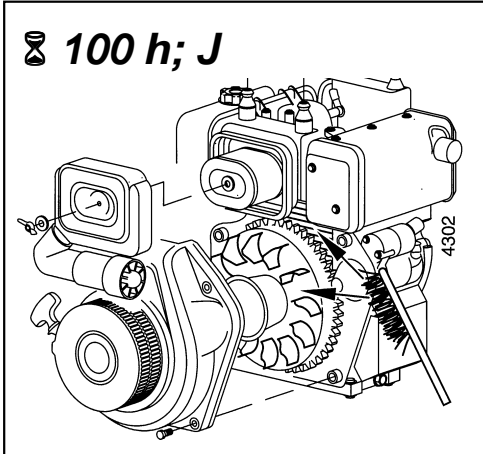
Fuel Hoses

Exchange after every **2 years**; exchange leaking fuel hoses immediately



Cleaning the Cooling System

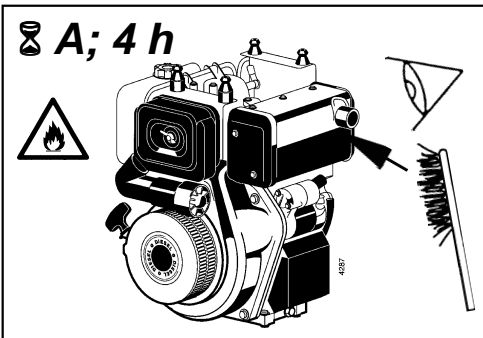
After a long period of operation the cooling system may become clogged by dirt and plant trash. Uninterrupted operation with a clogged cooling system causes the engine to heat up and become damaged.



- Always check cooling-air screen (D/7) and free from dirt and plant trash taken in.

- After every **100** operating hours or at least **once a year** before season starts remove fan case to clean cooling fins on cylinder and cylinder head as well as guiding plates and cooling-air screen, both serving for smooth air circulation.

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Exhaust System

Constantly check exhaust system (D/9) for plant trash and clean, if necessary. Otherwise **danger of fire!**

Check each time you take up operation.

Re-adjusting Valve Lash

After every **400** operating hours re-adjust valve lash. Re-adjust outlet and intake valve lash to be 0.15 ± 0.02 mm when the engine is cold.

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Injection Jet

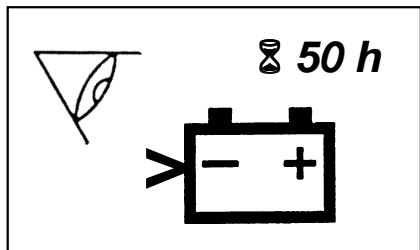
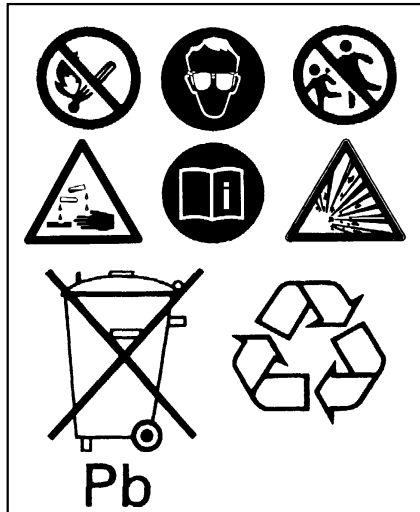
After every **400** operating hours, clean and check injection jet.

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Idling Speed

Always ensure that idling engine speed is adjusted correctly. At low speeds, the engine is supposed to run smoothly, with speed control lever at stop in neutral.

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Battery

There is no dry pre-charge of batteries on new machines, therefore batteries must be totally charged after filling them with accumulator acid (charge current = 1/10 of battery capacity).

If the machine or trailer will not be used for a longer period, the battery must be kept fully charged with a current of 0.06A and checked every 4 weeks and recharged, if necessary. Before recharge, disconnect negative pole.

! *Never leave battery in uncharged state.*

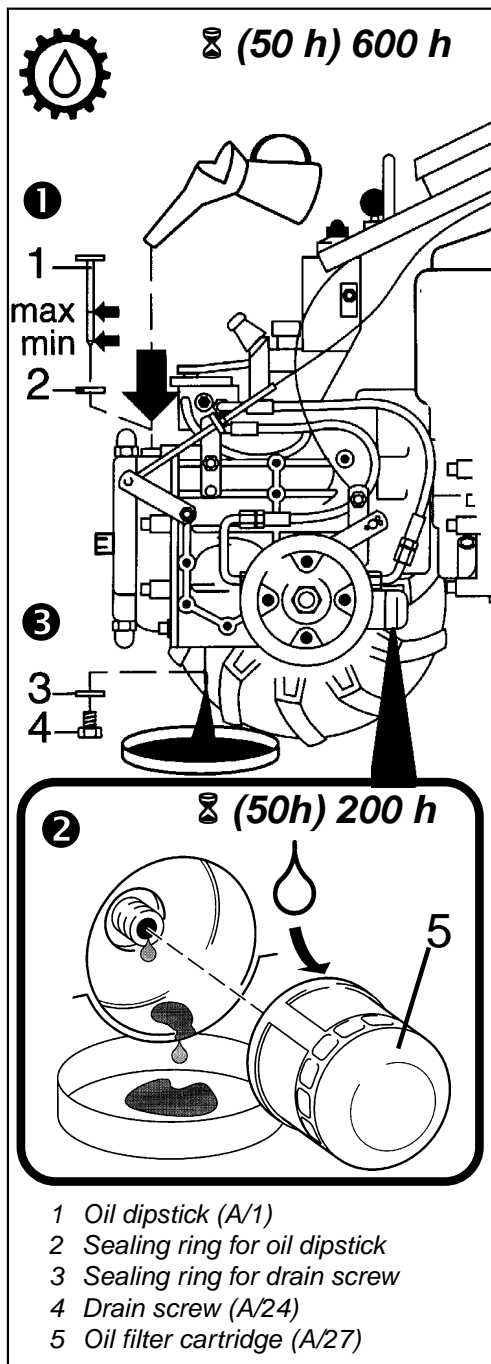
Note manufacturer's instructions. *Avoid sparking and open flames near batteries. Careful when handling battery acid – **etching!** Only use specified fuses. If fuses are too strong, the electric system will be destroyed – **danger of fire!***

Machine

Transmission

i Transmission oil is also hydraulic oil

When changing to Bio hydraulic oil HEES, drain oil filling and twice rinse the system (– see after-sales service information).



1 Check **oil level in transmission** each time before you take the machine into operation and after every **25** operating hours (oil dip-stick and filling opening (1). With the tool carrier parked in horizontal position, the oil level must be between the “**max**” and “**min**” marks.

- Screw out oil dip-stick, clean with clean cloth and screw back in.

- Take dip-stick out again and read oil level, refill transmission oil, if necessary. (Refilling volume between “min.” and “max.” = 1 l).

2 **Transmission oil filter change** after the first **50** operating hours and then always after **200** operating hours.

- Tilt machine forwards onto the connection flange.

- Screw out oil filter (5) and replace it – for new filter, wet the sealing ring with some oil.

- Dispose of oil filter as directed.

3 **Transmission oil change** with simultaneous oil filter change after the first **50** operating hours and after every **600** operating hours while the engine is still warm.

- Keep oil filler plug (1) and drain plug (4) extremely clean as well as surrounding parts to prevent dirt from penetrating into the transmission.

- Open drain plug, collect old oil in proper container and dispose of properly.

- Clean drain plug; the drain plug has a magnetic core and therefore attracts metallic powder.

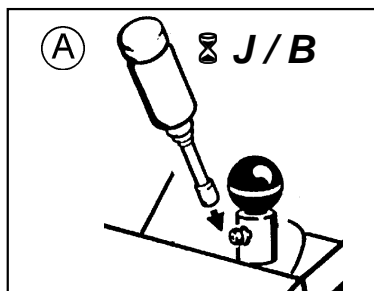
- Check sealing rings and exchange, if necessary.

- Screw in drain plug with o-ring and tighten.

- Fill in fresh transmission oil, up to level mark “max.”.

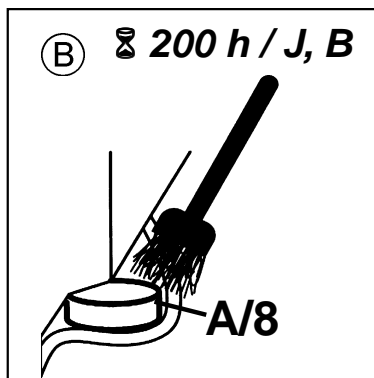
- For proper oil quantity and quality, refer to chapter “Specifications”.

- Close filling opening with plug/dip-stick.



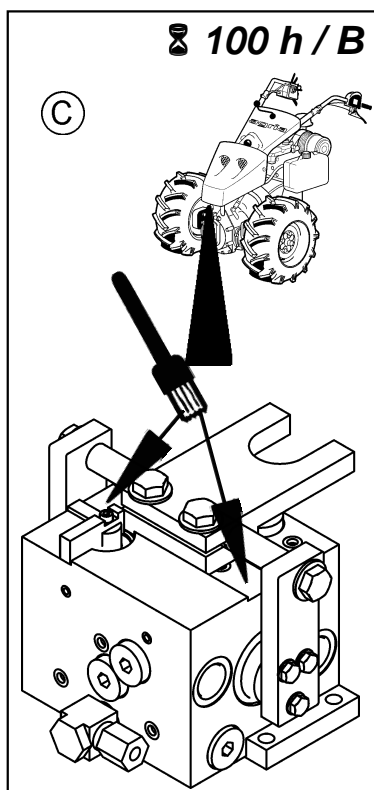
Steering Handle Locking Bolt (A)

At certain intervals, lubricate at the grease nipple with Bio lubricating grease. At least **once per year** and after cleaning with a high-pressure cleaner.



Steering Handle Lock (B)

Always after **200** operating hours and always after cleaning with a high-pressure cleaner, apply some Bio lubricating grease to either side of the rollers (A/8) for the steering lock.



Valve Steering (C)

As from valve steering 15:

Always after **100** operating hours and always after cleaning with a high-pressure cleaner, apply some Bio lubricating grease to either side of the sliding surfaces of the adjustment plate at the steering Valve 15.

Steering Handle Ultra-Bushes

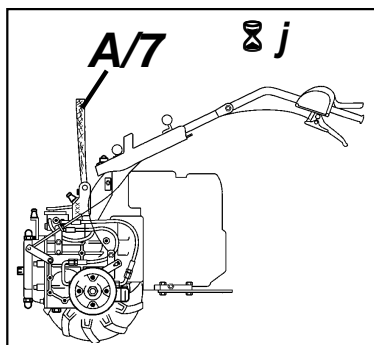
- Check condition always after **200** operating hours.

→agria - Service←

Steering Handle Central Screw

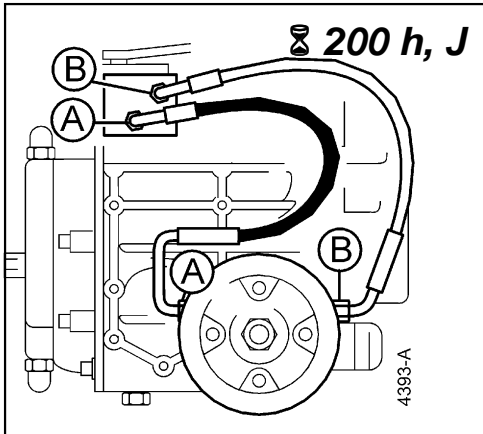
- Always after **200** operating hours, re-tighten central screw (A/9) with **140 Nm** and counter it again.

→agria - Service←



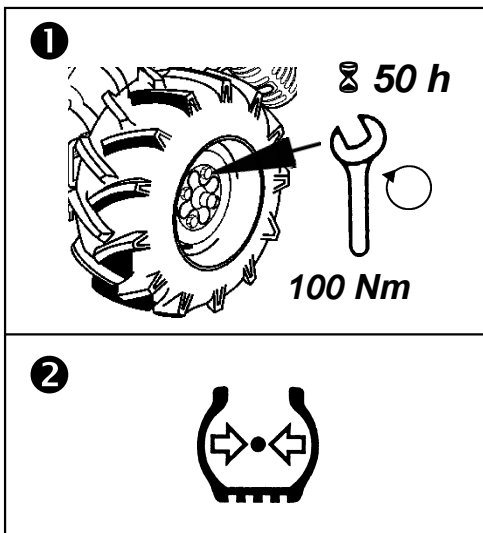
Loading Belt

Check loading belt for damage before each use and each time you maintain the machine, replace it not later than **10 years**.



Hydraulic Hoses

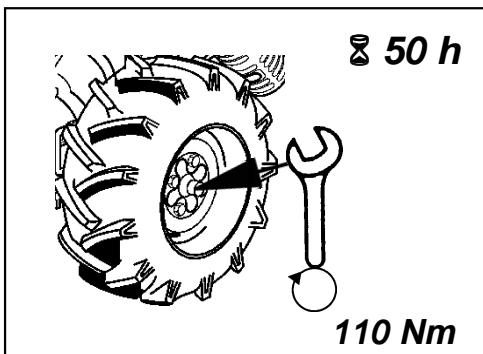
Check hydraulic hoses always after **200** operating hours or at least **once per year** for closeness.



Drive-Wheels

1 When commissioning the tool carrier and each time you change wheels, check and tighten wheel bolts and nuts after the first **2** operating hours with 100 Nm. Proceed likewise when doing maintenance work.

2 Check tyre air pressure regularly. For smooth driving, make sure that there is the same pressure in front and rear tyres respectively.



Wheel Hubs

● Always after **50** operating hours, retighten the hex nuts (A/26) on the wheel hubs to 110 Nm.

5

Brake

Always after **200** operating hours or at least once per year, check brake jaws and brake operating system for unhindered movement and efficiency.

→ **agria - Service** ←

Wheel Motors

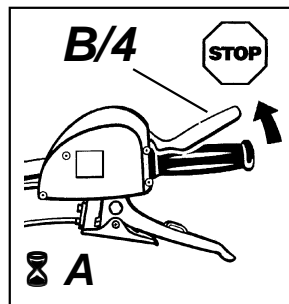
Always after **200** operating hours, check for straight driving with the steering handle in neutral position.

→ **agria - Service** ←

Petrol Engine Version

Safety Circuit

Check safety circuit function each time you take up operation and each time you maintain the machine.



- With clutch engaged and upon release of safety lever (B/4), the engine must automatically come to a stop.

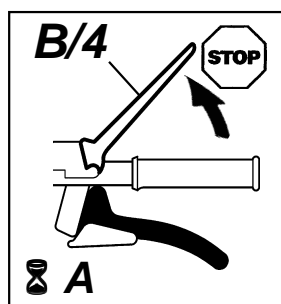
- Check electric lines and connections and exchange, if necessary.

→agria - Service←

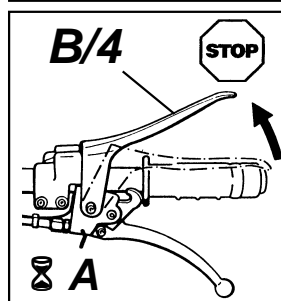
Diesel Engine Version

Safety Circuit

Check safety circuit function each time you take up operation and each time you maintain the machine.



- At release of lever (B/4), the engine must automatically come to a stop.



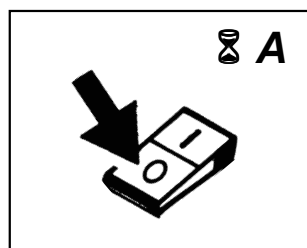
- If necessary, correct STOP-Bowden cable with Bowden cable set screw.

→agria - Service←

Engine Shut-off Switch

5

Check function of engine shut-off switch each time you take up operation and each time you do maintenance work.



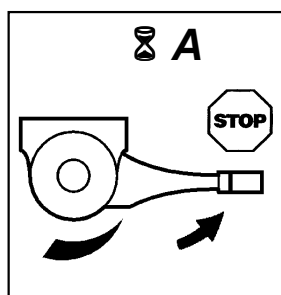
- With shut-off switch in position "0" the engine must come to a stop.

- Check electric lines and connections and exchange.

→agria - Service←

Engine Shut-off Switch

Check function of engine shut-off switch each time you take up operation and each time you do maintenance work.



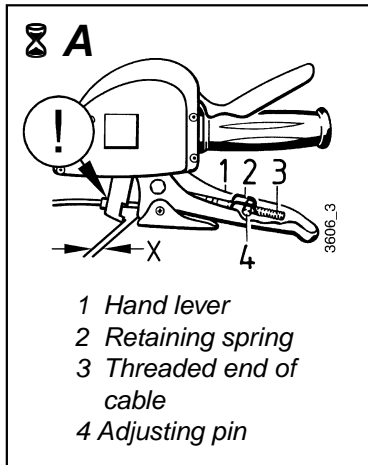
- If the speed control lever is in "STOP" position, the engine must come to stop. If necessary, correct engine speed cable or STOP-Bowden cable on Bowden cable set screws.

→agria - Service←

Clutch Lever

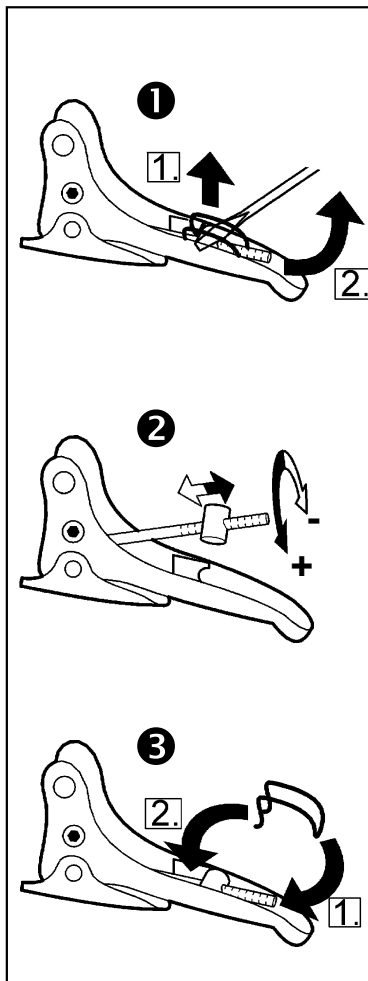
Check clutch play or clutch adjustment each time you operate the machine. If necessary, re-adjust (especially after commissioning the machine, during break-in period, and after exchanging clutch linings and brake pads).

Petrol Engine Version and Diesel Version >59001942

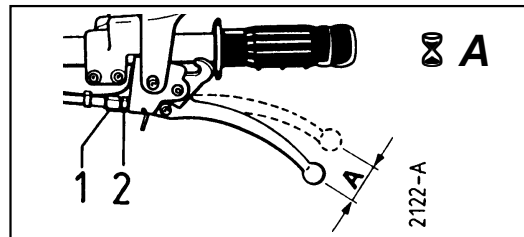


Clutch:
 $X = 3 - 5 \text{ mm}$
(Clutch play)

! = The Bowden cable must be placed in the hand lever support on **bottom** position



Diesel Engine Version <59001941

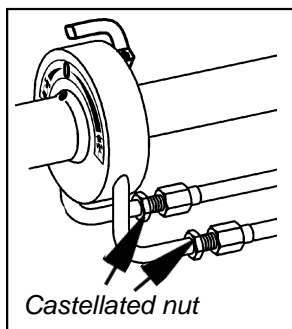


● Set the adjustment screw (1) to a play of "A". Turn screw in to reduce play, turn screw out to increase play.

● Then fix adjustment screw with a lock nut (2).

Free play of clutch and differential lock:

$A = 5-6 \text{ mm}$

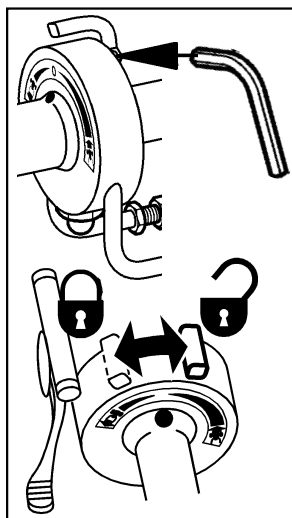


Twist-grip shift

Check for proper operation and adjustment when performing maintenance and adjust, if necessary

Setting

Set the twist-grip shift on the Bowden cable adjustment screw so there is no play, so that the marking point on the twist-grip matches the 0 position of the pump and the pictograph.



Twist-grip locking lever

Setting the clamp

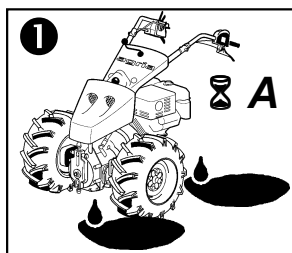
Loosen threaded rod about 1 revolution with hex key

Set locking lever so that:

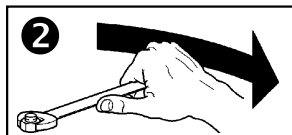
 = twist-grip can turn

 = twist-grip is clamped, cannot turn

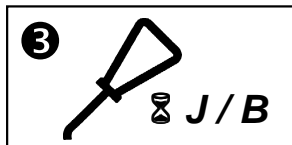
General Maintenance



1 Every time you take up operation watch out for fuel and oil leakage, repair if necessary.

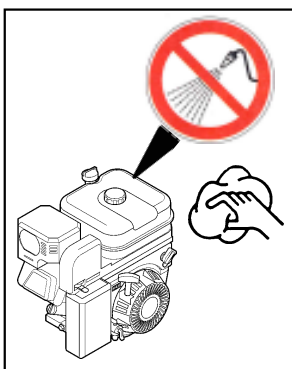


2 Regularly check bolts and nuts for tight fit, re-tighten, if necessary.



3 At least **once a year** and after cleaning: Slightly grease all gliding and moving parts (e.g. speed control lever, lever bearing, etc.) with bio-lubricating grease and bio-lubrication oil.

Cleaning



After each cleaning (spraying with water, especially with air-compressed water jets) lubricate all lubrication points, oil and let tool carrier run for a short time to press water out.

Apply grease generously to leave a grease ring around bearings to prevent water, plant sap, and dirt from penetrating.

Clean engine only with a cloth. Avoid spraying with air-compressed water jets, as water might leak into ignition and fuel system causing malfunctions.

Storage

For longer periods of no operation:

a) Clean thoroughly

Repair paint coat.

b) Spray all shining parts and the cutter bar with *Bio-slushing oil*.

c) Engine preservation

Petrol Engine

- Drain fuel completely or fill fuel tank and add fuel stabilizer (agria No. 799 09). - **Observe enclosed instructions.** Let engine run for approx. 1 minute.

- Change the engine oil.

- Fill a tea-spoon (approx. 0.03l) of engine oil into the spark plug opening. Slowly crank the engine.

- Reinstall the spark plug and set the piston to compression via the recoil starter (pull the starter grip until resistance is felt) – valves are closed.

- Slowly crank the engine after every 2–3 weeks (spark-plug connector is removed). Then set the piston to compression again.

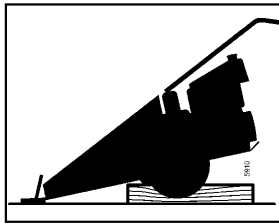
Diesel Engine

- Change engine oil.

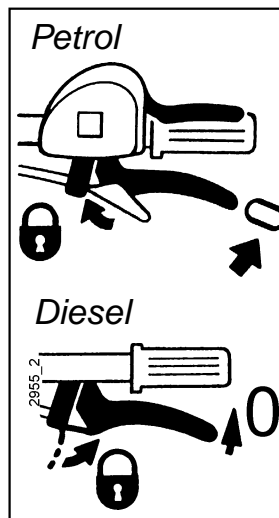
- For longer storage, close exhaust pipe and air filter opening with crape or similar tape.

d) Drive-wheels

Support drive-wheels in such a way that tyres have no ground contact. Pneumatic tyres are quickly destroyed, if left standing under load and unsupported.



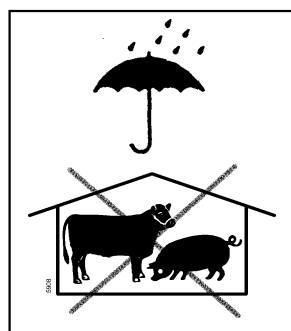
e) Clutch



Always park two-wheel tractor with clutch lever pulled (pawl locked in place). Otherwise clutch problems may result due to corrosion.

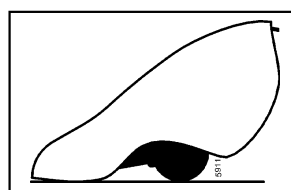
f) Parking

Because of severe corrosion **do not park the tractor**



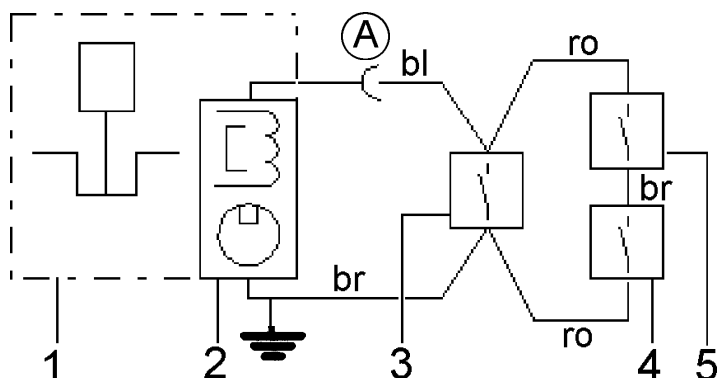
- in humid rooms
- in rooms where fertilizer is stored
- in stables or adjacent rooms.

g) Covering the machine

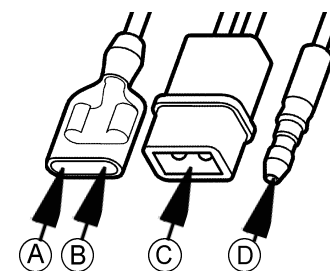


Protect the machine with cloth or a similar cover.

Petrol Engine/Recoil Starter



- 1 Engine
- 2 Magnet ignition system
- 3 Engine shut-off switch
- 4 Switch in clutch lever
- 5 Switch in safety circuit lever

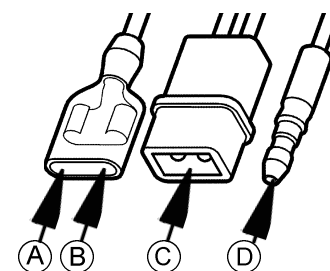


Connection at the engine

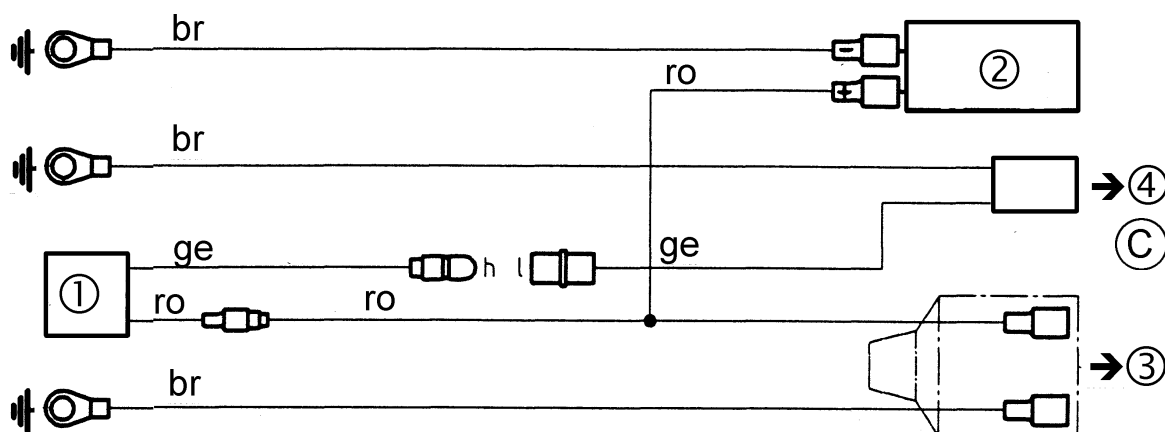
bl = blue
br = brown
ro = red

Petrol Engine/Recoil Starter - Socket

(Option set 786 44)



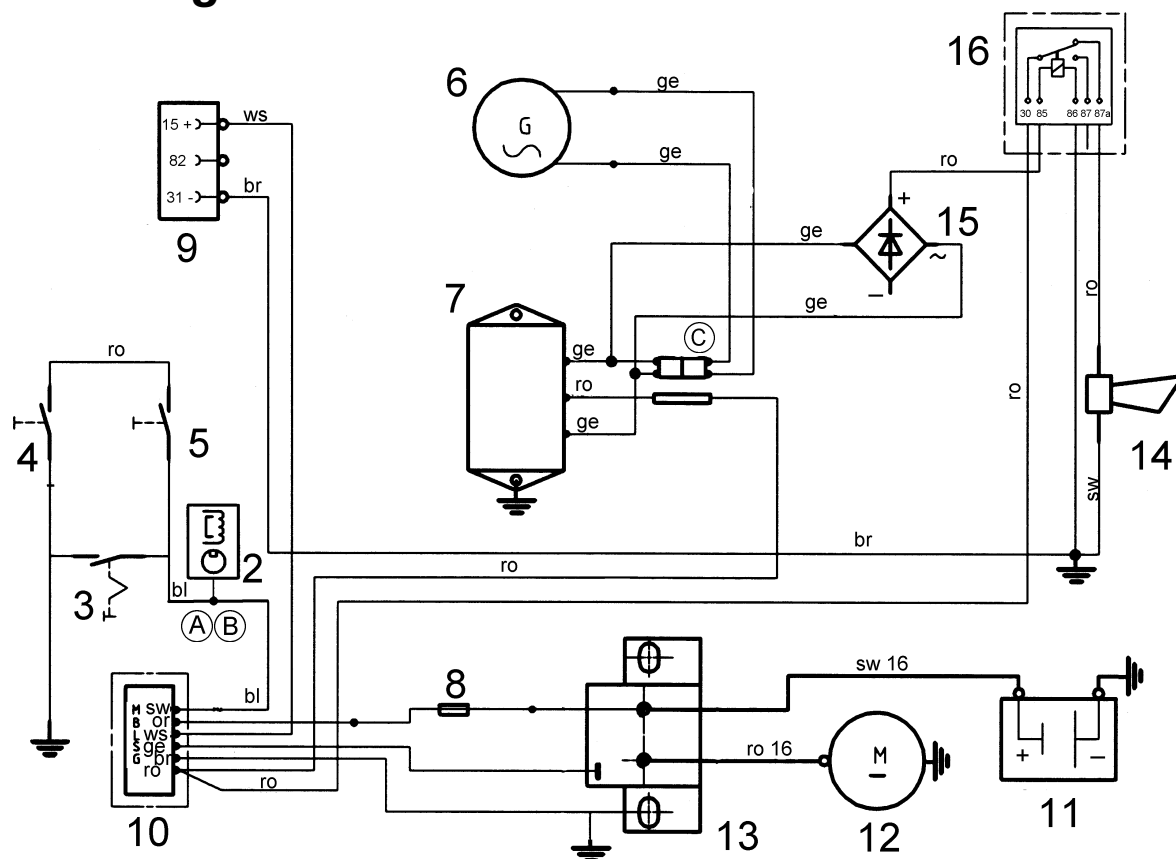
Connection at the engine



- 1 Regulator 12 V
- 2 Condenser AI-ELKO 2200µF-10+30% 40 V
- 3 Socket 12 V - DIN 9680-A
- 4 Connection engine ©

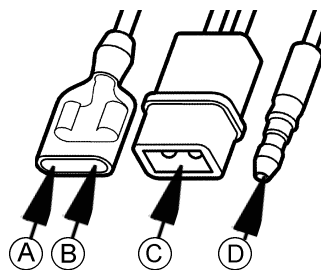
br = brown
ro = red
ge = yellow

Petrol Engine/E- Starter



bl = blue
br = brown
ge = yellow
or = orange
ro = red
sw = black
ws = white

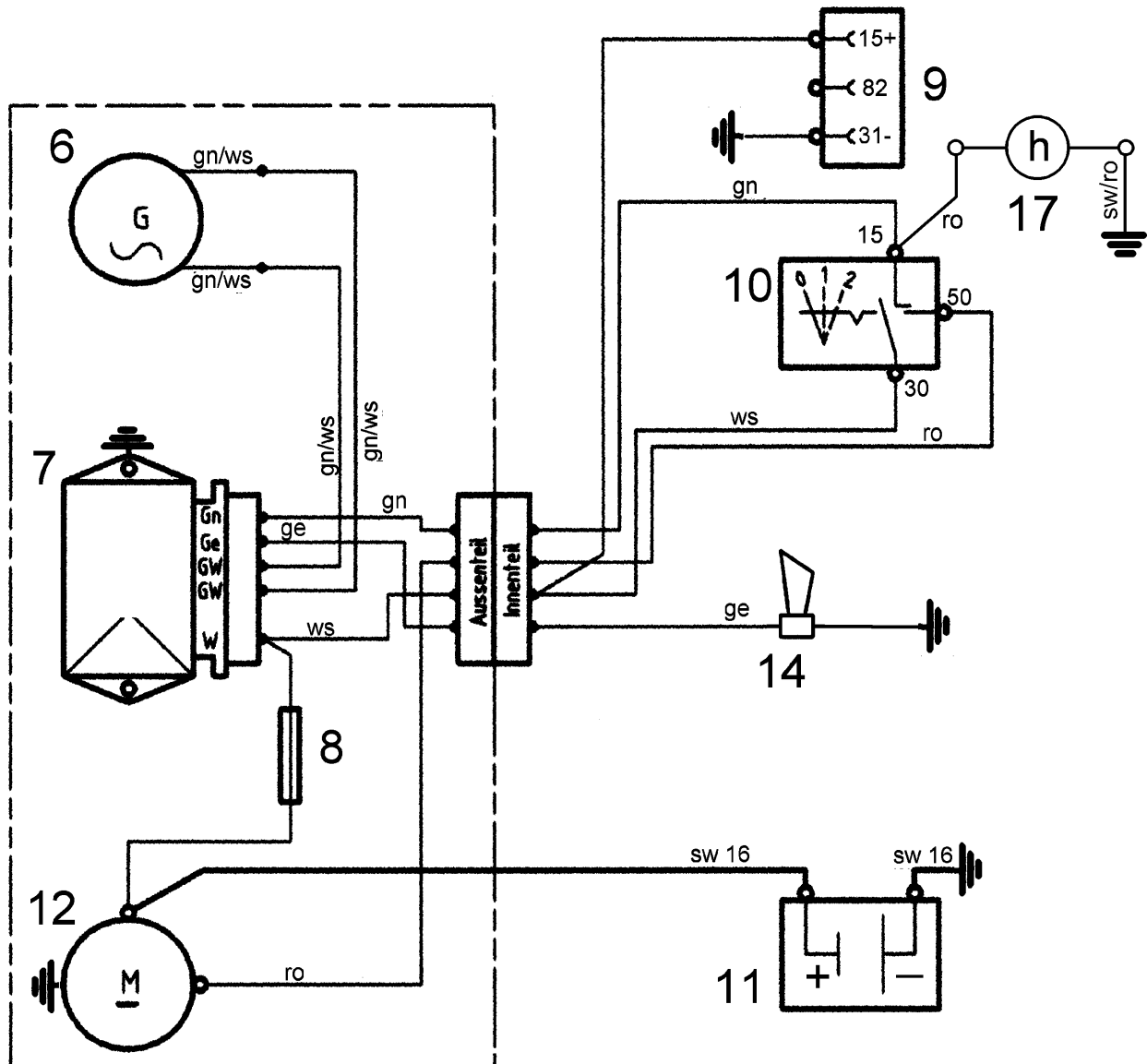
- 2 Magnet ignition system
- 3 Engine shut-off switch
- 4 Switch in clutch lever
- 5 Switch in safety circuit lever
- 6 Generator 12 V 16 A
- 7 Regulator 12 V-
- 8 Fuse 25 A
- 9 Socket 12 V - DIN 9680-A
- 10 Start switch
- 11 Battery
- 12 E-Starter 12 V
- 13 Start relay
- 14 Beeper
- 15 Electric rectifier
- 16 Relay change-over-contact 12 VDC 30 A



Connection at the engine:

- (A) (bl) → Safety circuit steering
- (B) (bl) → Start switch
- (C) (2x ge) → Regulator
- (D) Idle circuit (Oil Gard)

Diesel Engine/E-Starter



- 6 Generator 12 V 18 A
- 7 Regulator
- 8 Fuse 15 A
- 9 Socket 12 V - DIN 9680-A
- 10 Start switch
- 11 Battery
- 12 E-Starter 12 V 0,8 kW
- 14 Beeper
- 17 Operating Hours Counter

ge = yellow
 gn = green
 gn/ws = green-white
 ro = red
 sw = black
 sw/ro = black-red
 ws = white



Observe safety instructions! Have all serious malfunctions on the machine or engine repaired by your agria workshop. They have the proper tools. Improper repairs can only add to the damage.

Problem	Possible cause	Remedy	Page
Petrol Engine:			
Engine does not start	- Spark plug connector not connected	Connect spark plug connector	
	- Choke is not operated	Set choke lever to position CHOKE	36, 38
	- Engine shut-off switch is set to "0"	Set engine shut-off switch to "I"	36, 38
	- Safety circuit is not set to start position	Set safety circuit to start position	36, 38
	- Fuel tank empty or poor fuel	Fill fresh fuel	
	- Fuel line clogged	Clean fuel line	33
	- Defective spark plug	Clean, adjust or exchange spark plug	BM
	- Engine too much fuel ("flooded engine")	Dry and clean spark plug and start at full throttle	BM
	- Engine-off-line defective	Check line and connections	*
	- Inleaked air due to loose carburetor and suction line	Tighten attachment bolts	
Misfirings in engine	- Engine running in CHOKE range	Set CHOKE lever to operating position	
	- Loose ignition cable	Fit connector tightly on ignition cable, firmly connect spark plug connector to spark plug, fix ignition cable retaining device	36, 38
	- Clogged fuel line or poor fuel	Clean fuel line, fill fresh fuel	*
	- Vent opening in fuel tank cap clogged	Exchange fuel tank cap	
	- Water or dirt in fuel system	Drain fuel and fill fresh fuel	
	- Air filter clogged	Clean air filter or exchange	BM
	- Carburetor misadjusted	Re-adjust carburetor	* BM
Excessive temperature in engine	- Low engine oil level	Refill oil immediately	46
	- Impaired cooling	Clean cooling fan screen, clean internal cooling fins	47
	- Air filter clogged	Clean air filter	BM
	- Carburetor misadjusted	Re-adjust carburetor	* BM
Misfirings in engine at high speeds	- Short firing intervals	Adjust spark plug	BM
	- Incorrect idle mixture	Adjust carburetor	* BM
Engine frequently stalls in idle	- Firing interval too long, defective spark plug	Adjust or replace spark plug	BM
	- Carburetor misadjusted	Re-adjust carburetor	* BM
	- Air filter clogged	Clean air filter	BM
Engine does not run smoothly	- Speed control linkages clogged or jammed	Clean speed control linkages	BM
Engine does not stop when set to stop	- Defective engine-stop-line, earth missing	Check line and connection, check ground contact	*
			*

6. Troubleshooting

Problem	Possible cause	Remedy	Page
Engine output too low	- Air filter clogged - Loose cylinder head or damaged gasket - Poor compression	Clean air filter Tighten cylinder head, exchange gasket Have engine checked	BM ★ ★

Diesel Engine:

Engine does not start	- Speed control lever set to "STOP" - Fuel tank empty or poor fuel - Fuel line or fuel filter clogged - Injector nozzle or injection line clogged - Wrong injection pressure	Move speed control lever to "Max" Fill fresh fuel Clean fuel line or filter Clean injector nozzle or injection line Check pressure	40, 42 34 ★ 51 ★
Misfirings in engine	- Clogged fuel line or poor fuel - Vent opening in fuel tank cap clogged - Water or dirt in fuel system - Air filter clogged - Injector nozzle or injection line clogged	Clean fuel line, fill fresh fuel Exchange fuel tank cap Drain fuel and fill fresh fuel Clean air filter Clean injector nozzle or injection line	50 49 ★ 51
Excessive temperature in engine	- Lack of engine oil - Impaired cooling	Refill engine oil immediately Clean fan grid, clean internal cooling fins	48 51
Misfirings at high speeds	- Injector nozzle clogged - Wrong injection pressure	Clean injector nozzle Re-adjust injection pressure	★ 51
Engine frequently stalls in idle	- Air filter clogged	Clean air-filter	49
Engine does not stop when set to "STOP"	- Improper adjustment of engine-off-cable	Re-adjust engine-off-cable	56
Engine output too low	- Air filter clogged - Loose cylinder head or damaged gasket - Poor compression	Clean air filter Tighten cylinder head, exchange gasket Have engine checked	49 ★ ★

E-Start Version:

E-starter does not start	- Battery is empty - Fuse is defective - Harness, E-starter damaged	Charge or replace the battery Replace fuse Check harness and E-starter	52 31 ★
No warning signal sounds when engine stops	- Start switch not activated - Beeper is defective - Fuse is defective - Harness is damaged - Regulator is defective	Move start switch to "I" Replace beeper Replace fuse Check harness Check regulator	31 31 ★ ★

6. Troubleshooting

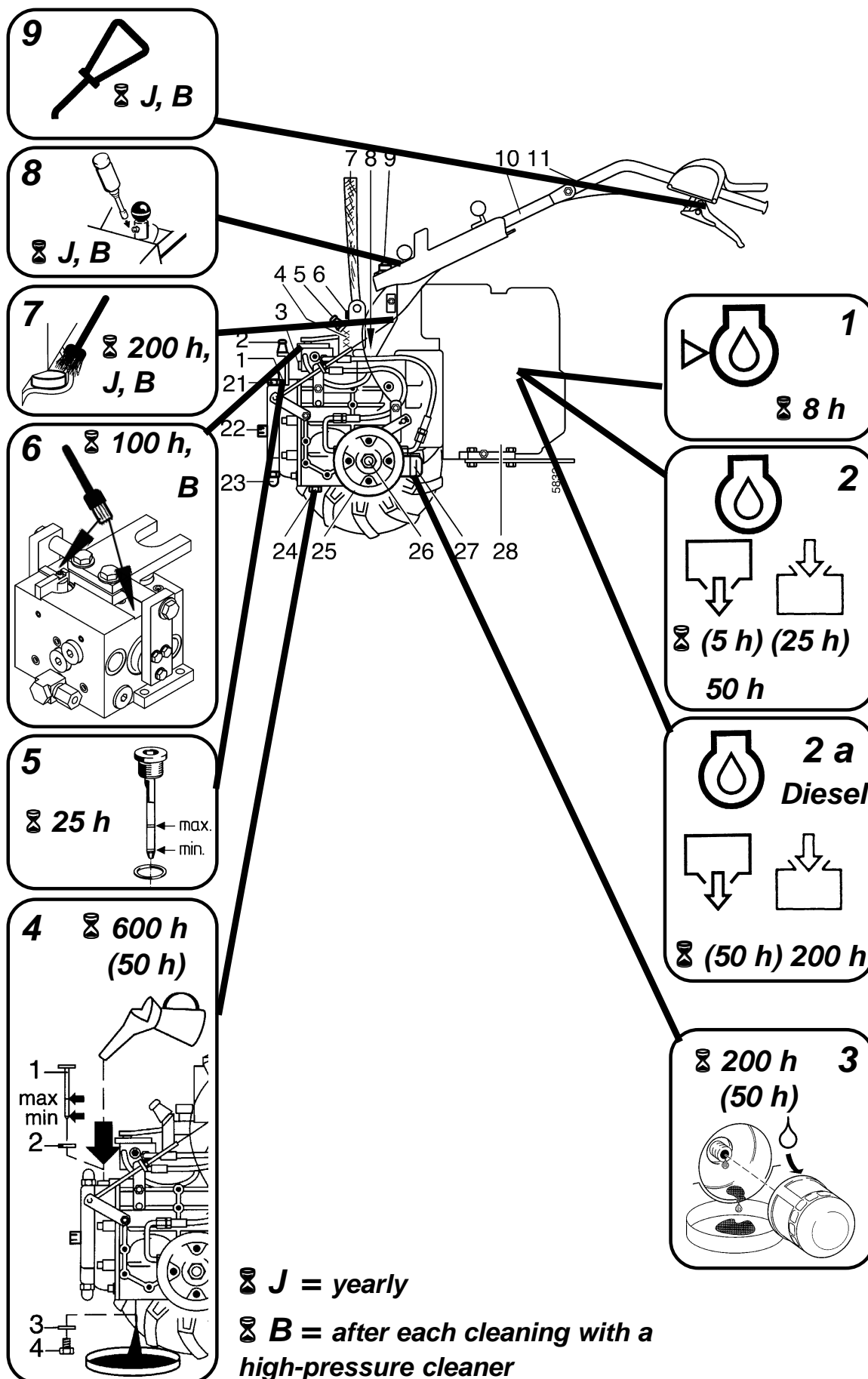
Problem	Possible cause	Remedy	Page
Warning signal sounds during operation	- Fuse is defective - Harness is damaged - Regulator is defective - Generator is defective	Replace fuse Check harness Check regulator Check generator	31 * * *

Machine in General:

Clutch does not decouple	- Clutch lever misadjusted	Adjust clutch free play	55
Clutch slips	- Clutch lever misadjusted - Worn out clutch	Adjust clutch free play Exchange clutch disc	56 *
No wheel drive	- Clutch is not engaged - Idle shift is operated	Engage clutch using the clutch lever Activate hydraulic drive	22 24
Excessive vibration	- Loosened attachment bolts	Tighten attachment bolts	58

* = For this purpose contact your agria workshop!

BM = see separate engine operating instructions



<div> <div>■ = only Petrol engine</div> <div>◆ = only Diesel engine</div> </div>	P	A	After operating hours										J	B	■	◆
	S	2	5	8	25	50	100	200	400	600					page	page
Check safety circuit function		K													55	55
Check engine shut-off switch function		K													55	55
Check free play of levers		K													56	56
Check air filter		K													BM	49
Clean cooling-screen		K													47	51
Clean surrounding parts of exhaust		K		K											47	51
Check engine oil level, refill, if necessary	1	K			K										46	48
Check bolts and nuts		K				K									58	58
Tighten wheel bolts and nuts			K												55	55
First engine oil change, subsequent oil changes	■ ■	2 2		W		W		W							46	
Check transmission/hydraulic oil level		5				K									53	53
Cleaning						K									58	58
First engine oil change, subsequent oil changes	◆ ◆	2 a 2 a					W									48
Clean engine oil filter first time, subsequent cleaning	◆ ◆						W			W						48
Clean air filter insert							W								BM	49
Retighten hex nuts of wheel hubs							W								55	55
First transmission oil filter change, subsequent filter changes		3					W			W					53	53
First transmission oil change subsequent oil changes		4					W					W			53	53
Check loading belt							K						K		54	54
Clean guide plates, cooling fins – earlier, if required								F					F		47	51
Clean spark plug, adjust electrode gap	■							K							BM	
Grease sliding surfaces of valve steering		6						K						K	54	54
Replace spark plug	■								K						BM	
Grease rollers for steering handle lock		7							K				K	K	54	54
Replace air filter insert, earlier, if required	■								W						BM	
Clean fuel filter	◆								K							50
Check hydraulic hoses									W				W		55	55
Check steering handle ultra-bushes									F						54	54
Retighten steering handle central screw									F						54	54
Check brake									F						55	55
Check wheel motors for straight driving									F						55	55
Replace air filter insert, earlier, if required	◆									K						49
Replace fuel filter	◆									K						50
Clean carburetor and adjust	■									F					BM	
Check engine compression	■									F					BM	
Adjust valve clearance										F					BM	51
Clean cylinder head	■									F					BM	
Clean injection jet and check	◆									F						51
Lubricate all sliding parts		9											K	K	58	58
Grease steering handle locking bolt		8											K	K	54	54
Replace fuel hoses													W*		BM	50

BM= see separate engine operating instructions

P = Item in lubrication chart (page 65)

A = Each time before you take up operation

B = After each cleaning, especially with a high-pressure cleaner

J = min. yearly

K = Checks and maintenance to be executed by operator

W = Maintenance to be executed by professional workshop

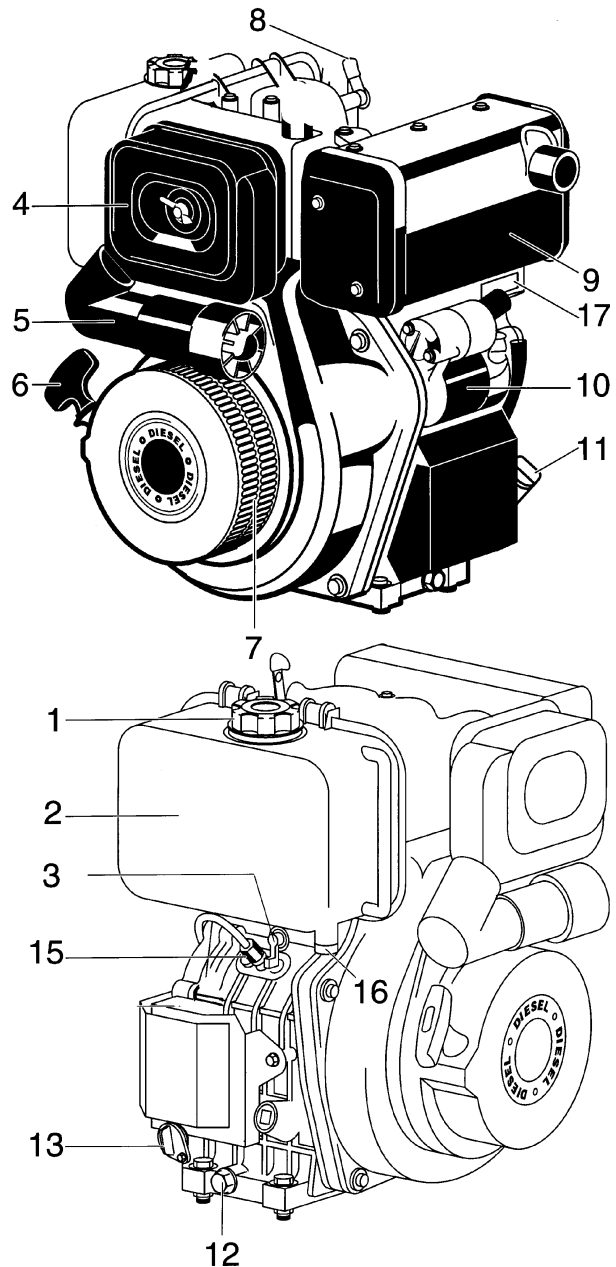
F = Maintenance should be carried out by your agria workshop

* = after 2 years

Fig. D

Engine L100AE

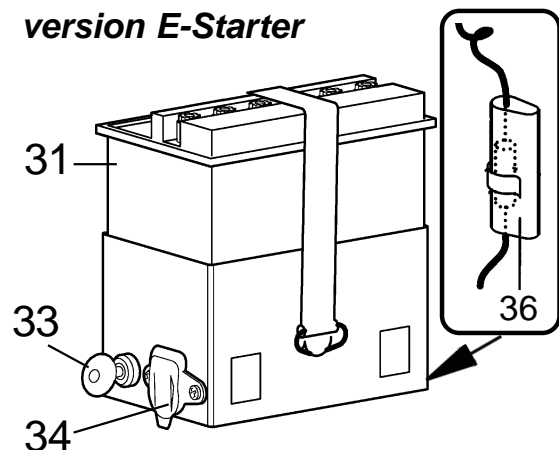
- 1 Fuel tank cap
- 2 Fuel tank
- 3 Fuel tap
- 4 Air filter
- 5 Preliminary air filter
- 6 Starter grip
- 7 Cooling air grille
- 8 Decompression lever
- 9 Exhaust
- 10 Electric Starter
(only version E-Starter)
- 11 Engine oil filler opening,
dip-stick
- 12 Engine oil drain plug
- 13 Engine oil filter
- 15 Injection pump
- 16 Fuel drain plug
- 17 Engine type plate; engine I.D.

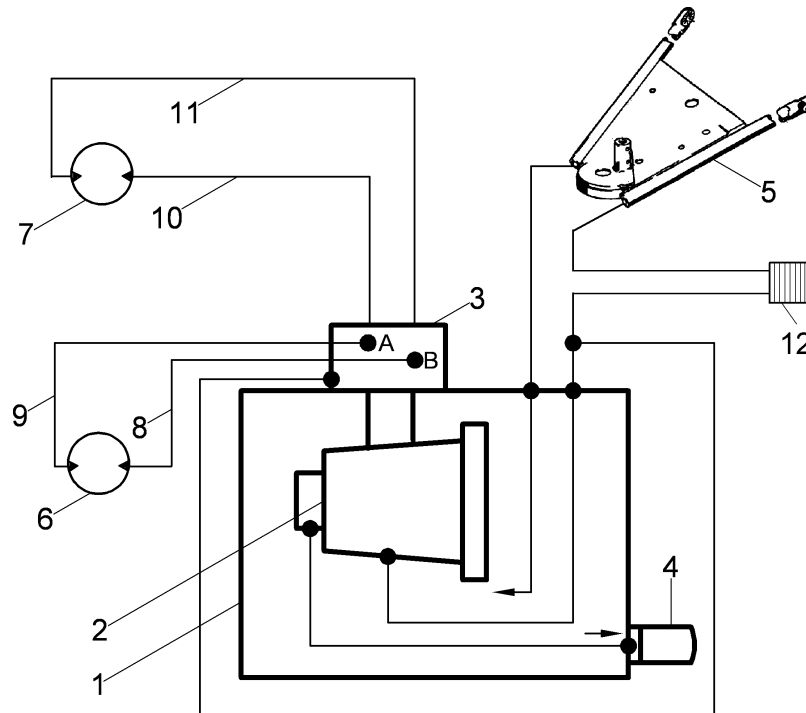


only version E-Starter:

- 31 Battery
- 33 Start switch
- 34 Socket
- 36 Fuse holder (with glass fuse)

version E-Starter

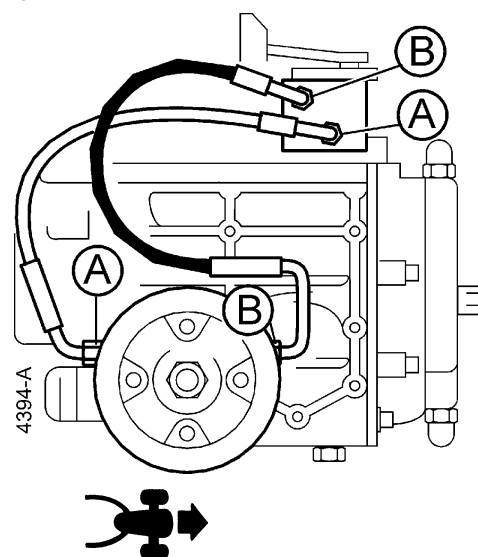
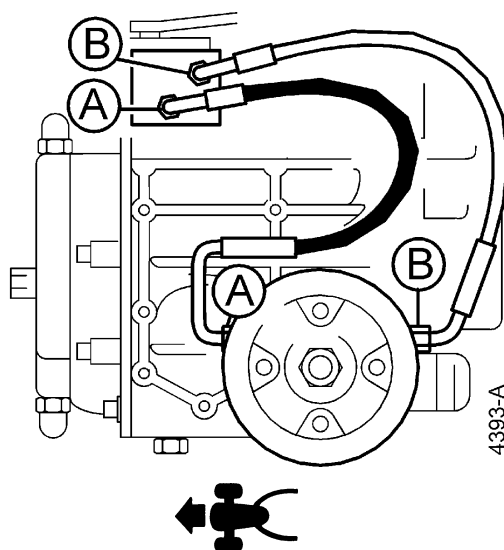




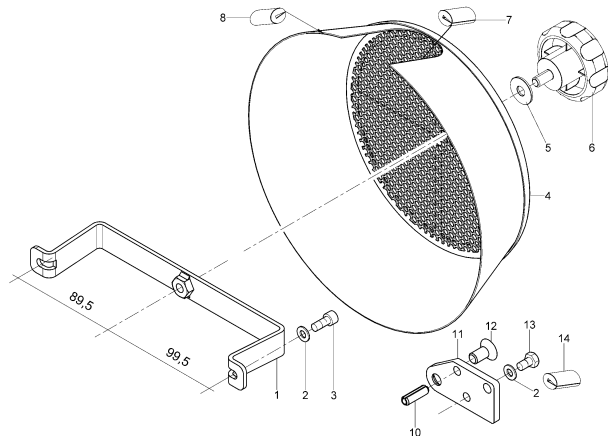
- 1 Transmission incl. oil reservoir
- 2 Hydraulic pump
- 3 Valve steering
- 4 Filter cartridge
- 5 Lower handlebar with oil cooler
- 6 Wheel motor left

- 7 Wheel motor right
- 8 Hydraulic hose left B
- 9 Hydraulic hose left A
- 10 Hydraulic hose right A
- 11 Hydraulic hose right B
- 12 Oil cooler

Hydraulic hoses



	left	right
A = Hydraulic hose	774 25	774 26
B = Hydraulic hose	768 43	768 44



Screen fan for B&S Vanguard 13 HP

Option: Parts set 799 59

Recommendable for mowing use

Roller guard

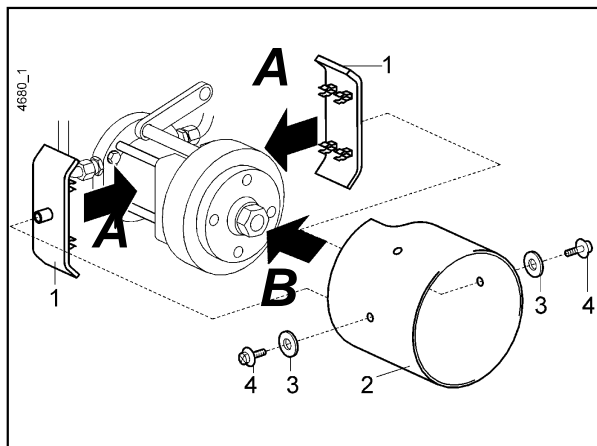
Option: Parts set 760 58

Assembly:

A Clip roller guard support (1)
to draw spindle of wheel motors

B Push roller guard (2) over
wheel motors

- Note notch for brake lever.
Fasten with screws (4) and washers (3)



agri^a Order No.

Fuel Stabilizer for Petrol Engine

799 09	Fuel stabilizer	pouch	5 g
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Varnishes

181 03	Spray varnish birch-green	spray tin	400ml
712 98	Spray varnish red, RAL 2002	spray tin	400ml
509 68	Spray varnish black	spray tin	400ml

Glues (for screw fastening)

559 94	Glue (medium) LOCTITE 242	bottle	50ml
559 95	Glue (strong) LOCTITE 270	bottle	50ml
559 96	Glue (ultra strong) LOCTITE 638	bottle	50ml

Surface Sealing

509 68	Surface sealing (liquid) LOCTITE 573	tube	250ml
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Wear Parts

Petrol Engine Vanguard 13 HP

410 049	Air filter element
410 050	Foamed preliminary filter
706 09	Spark plug, Bosch FR8DC
760 15	Flat plug fuse 25A

Diesel Engine

415 060	Air filter element
415 010	Fuel filter
415 011	Sealing ring fuel filter
021 43	O-ring 14x1.6, fuel tap
009 16	O-ring 16x22x1.5, oil drain plug
768 99	glass fuse 15A (30x6,5)

Transmission:

009 16	O-ring 16x22x1.5, oil dip-stick and oil drain plug
527 06	Oil filter cartridge

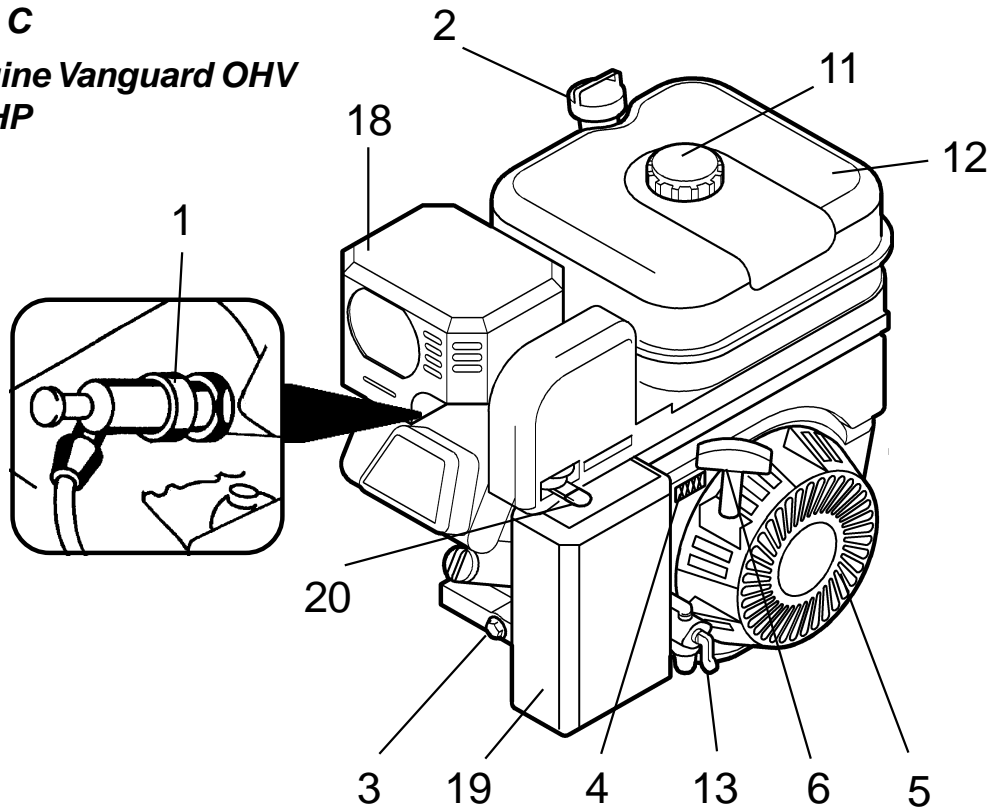
Emergency Tyre Repair:

713 13	Tyre repair gel	Terra-S	bottle 1l
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Lists of Spare Parts

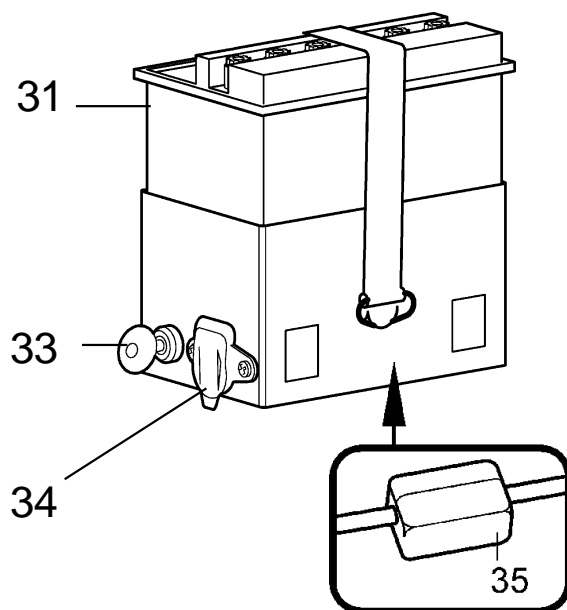
997 153	Tool carrier Bison 5900
997 083	Implements for 3400, 5500, 5900
997 062	Cutter Bars
997 137	Briggs & Stratton Engine
997 147	Yanmar Engine

Fig. C
Engine Vanguard OHV
13 HP



E-Starter Version

- 1 Spark plug/spark plug connector
- 2 Oil dip-stick/oil filling opening
- 3 Oil drain plug
- 4 Engine identification number
- 5 Recoil starter/cooling air screen
- 6 Starter handle
- 11 Fuel tank cap
- 12 Fuel tank
- 13 Fuel tap right
- 18 Muffler
- 19 Air filter
- 20 Choke lever



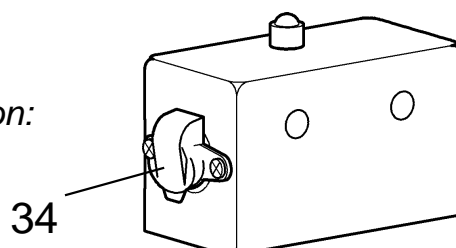
only for E-starter version:

- 31 Battery
- 33 Starter switch
- 34 Socket 12 V - DIN 9680-A
- 35 Fuse holder in battery box (with flat plug fuse)

optional socket for recoil starter version:

- 34 Socket 12 V - DIN 9680-A

Optional Socket Recoil Starter Version



EG-Konformitätserklärung EC Declaration of Conformity

CE Déclaration de conformité EG conformiteitsverklaring

(D)

Wir

(F)

Nous

(GB)

We

(NL)

Wij

**agria-Werke GmbH
Bittelbronner Str. 42
D-74219 Möckmühl/Württ.**

erklären, dass das
Produkt

déclarons que le produit

herewith declare that
the product

verklaren dat het
produkt

Geräteträger

Porte-Outils

Tool Carrier

Werktuigdrager

Bison 5900 141, -151, -421, -431

mit allen einschlägigen
Bestimmungen der EG-
Maschinenrichtlinie
2006/42/EG in
Übereinstimmung ist.
Die Maschine ist auch in
Übereinstimmung mit allen
einschlägigen
Bestimmungen der
folgenden EG-Richtlinie:
2004/108/EG

est conforme à toutes les
exigences respectives
selon la directive relative
aux machines **2006/42/CE**.
La machine est aussi
conforme à toutes les
exigences respectives
selon la directive CE
suivante:
2004/108/CE

conforms to all relevant
specifications of the
Directive on Machinery
2006/42/EC.
It is also conform to all
relevant specifications of
following EC directive:
2004/108/EC

voldoet aan de
desbetreffende bepalingen
van de EG-machinerichtlijn
2006/42/EG.
De machine voldoet ook
aan de desbetreffende
bepalingen van het
volgende EG-richtlijn:
2004/108/EG

Folgende harmonisierte
Normen (oder Teile davon)
oder techn. Spezifikatio-
nen wurden angewendet:

Les normes harmonisées
(ou extraits de celles ci) ou
les spécifications
techniques suivantes ont
été appliquées:

Following harmonized
standards (or parts of it) or
technical specifications
have been applied:

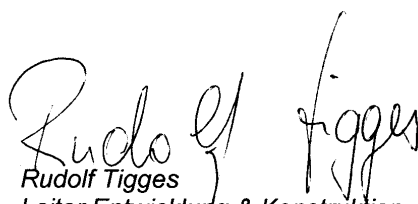
De volgende
geharmoniseerde normen
(of delen ervan) of
technische specificaties
werden toegepast:

**EN 12733: 2001 + A1: 2009;
DIN EN ISO 14121-1**

Möckmühl, den 11.11.2011



Siegfried Arndt
Geschäftsführer
Directeur
Managing Director
Bedrijfsleider



Rudolf Tigges
Leiter Entwicklung & Konstruktion
Responsable développement et études
Head, Research and Development
Hoofd ontwikkeling en constructie

Herr Tigges ist bevollmächtigt die technischen Unterlagen zusammenzustellen.
Monsieur Tigges est habilité à agencer la documentation technique.
Mr. Tigges is authorized to assort the technical documents.
De heer Tigges is gemachtigd om de technische documentatie op te stellen.
Anschrift/adresse/address/adres:
agria Werke GmbH, Bittelbronner Str. 42, D-74219 Möckmühl



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